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ABSTRACT

Intended for use by employment and training staff, especially test coordinators and administrators, counselors, and instructors, this guidebook provides an understanding of eight essential tasks in planning and implementing a testing and assessment program. It is divided into three parts. The introductory section explains the purposes of the book, defines key terms, and presents an introductory discussion of reasons for testing. In the second section the action planning guidelines are detailed. Eight essential tasks (and 67 specific activities/subtasks) are identified: (1) establish assessment program, (2) analyze participants' needs, (3) analyze program services, (4) examine testing resources, (5) select tests and testing systems, (6) set test specifications for participants, (7) use tests and tools for gathering information, and (8) use test results. Action planning worksheets are provided for each task. The third part includes five sections called "Exploring Tests and Test Systems." Test descriptions are provided for 74 tests including paper-and-pencil devices, comprehensive test batteries, rating scales, inventories, and the work sample approach. Descriptions include a one-phrase description, detail about format, stage of development of instruments, possible applications, and test publishers' addresses. Appendixes include practitioner comments and standards for tests. (YLB)

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TESTING
IN EMPLOYMENT AND TRAINING PROGRAMS

An Action Planning Guidebook

Provided by the Technical Assistance for Occupational Skills Training Project Sponsored by the Office of Youth Programs, U.S. Department of Labor

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The National Center for Research in Vocational Education
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1960 Kenny Road
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FOREWORD

Testing in Employment and Training Programs: An Action Planning Guidebook is one of sixteen products or services developed for the Department of Labor's Office of Youth Programs. These products and services are intended to comprise a "full-service" technical assistance model that can be used by the employment and training community to better meet the training needs of staff and CETA-eligible youth and adults.

The contributions of the Fort Wayne (Indiana) Area Consortium, Philadelphia Office of Employment and Training, and Kentucky Balance of State Prime Sponsor are gratefully acknowledged. These sites participated in the planning and pilot testing of selected products and services.

Appreciation also is expressed to project staff. Robert Bhaerman, Research Specialist, was the major author. Other staff members include Brian Fitch, Program Director; Sandra Pritz, Program Associate; Bettina Lankard, Program Associate; Gale Zahniser, Program Associate; and William Goldwair, Research Specialist.

Robert E. Taylor
Executive Director
The National Center for Research
in Vocational Education

EXECUTIVE SUMMARY

This action planning guidebook provides an understanding of eight essential tasks in planning and implementing a testing and assessment program. The tasks are as follows:

Task 1: Establishing the assessment program

Task 2: Analyzing participants' needs

Task 3: Analyzing program services

Task 4: Examining testing resources

Task 5: Selecting tests that–

- Are compatible with goals of the agency
- Are appropriate for participants
- Are relevant to program services
- Provide sufficient information in terms of the purposes for which they are to be used

Task 6: Setting test specifications–for individuals and groups

Task 7: Using tests as tools for gathering information

- Administering
- Scoring
- Interpreting
- Adapting to participants
- Pretesting

Task 8: Using test results

- Planning EDPs
- Counseling and instructing
- Reporting to participants and writing other reports, as needed
- Evaluating programs and planning additional program services

The guidebook is intended for use by employment and training staff, especially test coordinators and administrators, counselors, and instructors. Its format allows quick and easy reference, thus providing these audiences with an understanding of what tasks need to be addressed and why they should be considered.

Provided in the guidebook are abstracts describing testing instruments that should be used for specific measurement areas and explanations of the criteria that should be used to select, use, and interpret the results of tests. The guidelines and suggested activities should be useful in answering these and similar questions that practitioners raise. The guidelines were derived from a synthesis of much that has been written on this topic during the past few years. They are intended to provide principles by which to make judgments or determine a course of action; hence, the term "action planning guidelines" is used. In light of the recent emphasis on education and world-of-work relationships, concrete suggestions for program planning and implementation in this area are vital.

The guidebook is divided into three parts. The introductory section explains the purposes of the book, defines key terms, and presents an introductory discussion of such questions as "why should we test?" In the second section, the action-planning guidelines are detailed; eight essential tasks and sixty-seven specific activities (subtasks) are identified. The third part includes five extensive sections called "Exploring Tests and Test Systems." In these sections, test descriptions are provided for seventy-four tests including paper-and-pencil devices, comprehensive test batteries, rating scales, inventories, the work sample approach, and many others. The descriptions include ample detail about the test formats, the stage of development of the instruments, possible applications in an employment and training situation, and the addresses of test publishers. In addition, an extensive bibliography is provided, as are responses from a survey of test users. A number of relevant standards for educational and psychological tests developed by the American Psychological Association also are included.

Another major feature is the action-planning worksheets. As noted in the guidebook, testing is a complex activity—in some ways an art, in some ways a science. The worksheets are intended to assist test users to develop a program based upon analysis of a number of important elements in the entire process. For each of the specific subtasks, the user determines the steps that should be taken locally.

INTRODUCTION

Purposes of the Guidebook

> "Our needs are for a more extensive testing program. Currently we have a career information focus and use two achievement tests, but we also need to test for aptitudes and specific skills. We need to know the skills people possess that will make them successful. Inventories tell you what interests someone has. That is fine, but we need to know more. We need to find out about career and vocational aptitudes. Currently we do not have that type of testing, nor do we use work samples, although one of our resource centers plans to begin a work evaluation system soon."
>
> *A CETA Prime Sponsor*

This view concisely—and quite typically—expresses concerns of employment and training agency staff persons working in the area of testing. The statement also implies a number of questions common to such agencies; for example, what testing instruments should be used for specific measurement areas and what criteria should be used to select and use tests and interpret the results? The guidelines and suggested activities will be useful in answering these and similar questions that practitioners raise.

The guidelines were derived from a synthesis of the literature written on this topic during the past few years. They are intended to provide principles by which to make judgments or to determine a course of action; hence, the term "action planning guidelines" is used. In light of the recent emphasis on education and world-of-work relationships, concrete suggestions for program planning and implementation in this area are vital.

The guidebook is intended for use by employment and training staff persons—test coordinators and administrators, counselors, instructors, and staff trainers—a number of whom reacted to the initial draft. The format—a guide for "quick usage" and "spot checking"—was recommended by this group of practitioners. It is intended to provide these audiences with an understanding of what tasks need to be addressed and why they should be considered.

Purposes of Testing

The term testing often is used interchangeably with the term assessment. Both are commonly used to describe the act of appraising, evaluating, analyzing, or observing the skills, attitudes, knowledge, intelligence, capacities, or aptitudes of an individual or group. Both terms will be referred

to in this guidebook, although the primary focus will be on testing. The following definitions describe the difference between testing and assessment:

- Testing is the standardized measure or system for determining a participant's capacity in different areas, for example, vocational skills, aptitudes, and interests.
- Assessment is the process used to gather information about an individual that can serve as the basis for determining the services or programs provided to a participant. (A.L. Nellum, 1979b, p.65)

If testing is considered a part of the initial assessment process, it is important that the purposes for testing be sound. There are a number of purposes for which employment and training programs test potential participants. The ones summarized below are positive in nature in that they can benefit both the participant and the program by providing data on appropriate action that can be taken.

- Testing is frequently conducted *to determine potential for success in a program.* This is necessary if, for example, a training program requires that trainees have achieved a specific level in reading and math skills. A test of basic skills can determine the level of the participant's skills. If it is determined that the participant does not possess the requisite skills, that participant is not screened out but is placed in a program designed to remediate those skills. When the required skill level is reached, the opportunity to enter the chosen training program is once again made available.
- Another closely related reason for testing is for *placement in specific training programs.* Tests can be used to identify not only participants' career or job interests but also their job-related abilities and aptitudes. It is imperative that every effort be made to align the participants' interests and abilities with skill training programs and subsequent employment opportunities.
- Valid and reliable tests are useful in *placing participants on a job.* Admittedly, there is no foolproof predictor of success; however, an accurate assessment of characteristics and a knowledge of particular job requirements and employer demands can increase the success with which participants and job openings are matched.
- Use of a test or tests *as a counseling tool* encompasses the other uses listed. Test results can be very valuable for a counselor who is interpreting them to participants and helping them make decisions which will influence the content of their Employability Development Plans (EDPs). Providing participants with understandable and accurate interpretations of test results, allowing them to consider those results, and encouraging their significant input in the EDP all are essential to participant involvement and their sense of ownership of the plan. This also will enhance the participants' level of commitment to achieve the benchmarks established.
- Testing also *can provide information for program planning and evaluation.* The frequency with which specific participant needs are identified (e.g., employability attitudes, job skills, and the like) will affect the frequency with which such programs are offered. Tests that reflect participant interests and aptitudes can, if compatible with the demands of the local labor market, indicate a need for training in specific jobs or career clusters and should be considered when planning and evaluating program offerings.

As purposes for testing are being stated, it bears mentioning that there also are purposes for which tests should not be used. Probably the most important is that tests should not be used to screen people out of a program. Frequently, when there are more applicants than program slots, testing is erroneously used to "cream" applicants, placing in a program only those with the highest

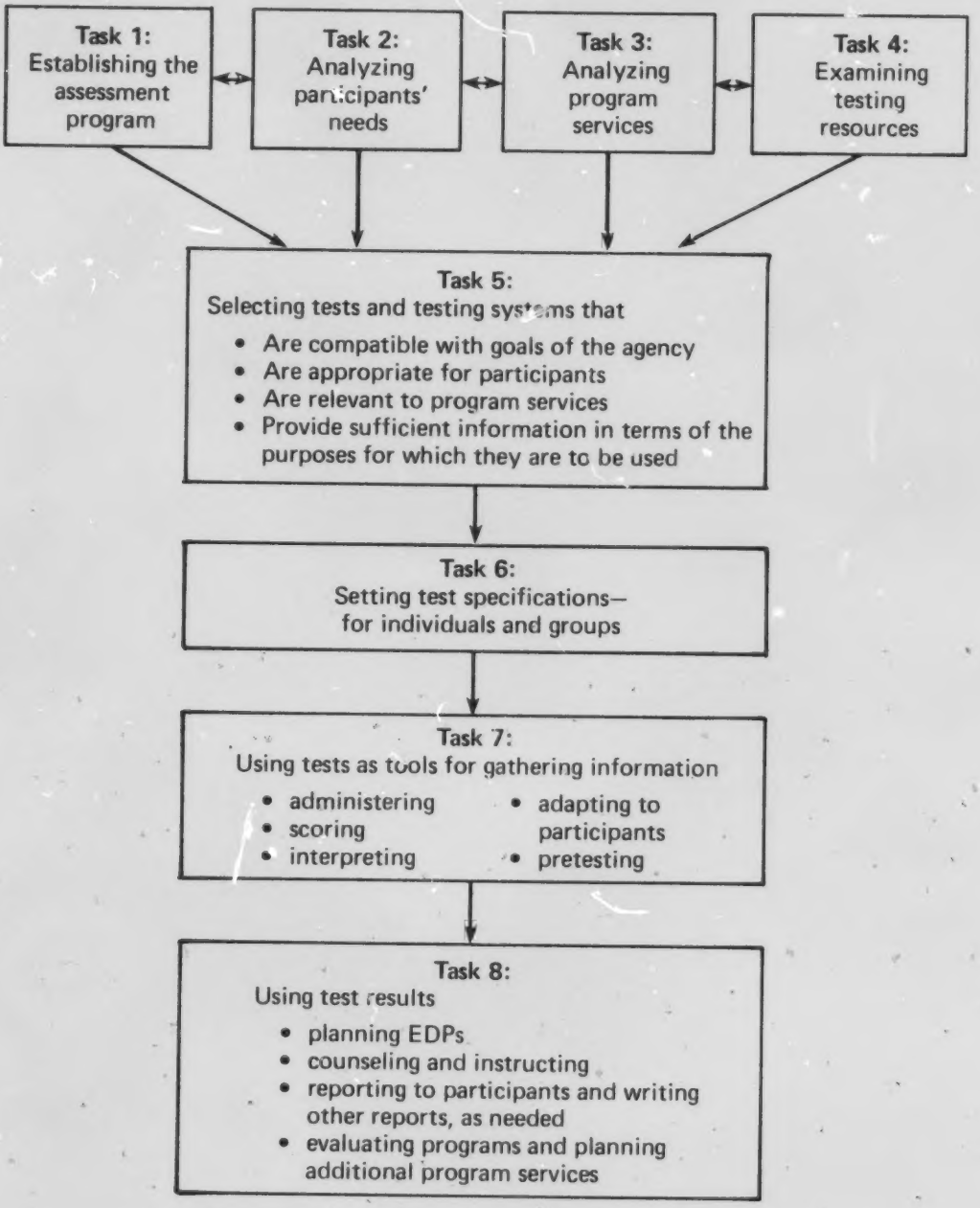
chances of success. The program may then be guilty of not serving those applicants most in need. This is not to say that applicants who do not meet the minimum entry requirements should be placed in a training program. However, instead of being denied program participation, they should be placed in a remedial program in which their skills can be improved. When their skills meet the training program's entry requirements, they should be given an opportunity to enroll. In this way, testing is a service to participants.

This participant-centered approach implies that testing should provide participants with new and significant information about themselves as it relates to satisfying employment that would not have been available otherwise. It provides the opportunity for the participants to formulate a clear picture of their employment needs.

PLANNING FOR ACTION

An Overview of Eight Essential Tasks

In order to assist test users and potential users in implementing an assessment program, the following synthesis—a chart of eight essential tasks—has been developed:


Task 1: Establishing the assessment program
Task 2: Analyzing participants' needs
Task 3: Analyzing program services
Task 4: Examining testing resources
Task 5: Selecting tests and testing systems that
• Are compatible with goals of the agency
• Are appropriate for participants
• Are relevant to program services
• Provide sufficient information in terms of the purposes for which they are to be used
Task 6: Setting test specifications— for individuals and groups
Task 7: Using tests as tools for gathering information
• administering
• scoring
• interpreting
• adapting to participants
• pretesting
Task 8: Using test results
• planning EDPs
• counseling and instructing
• reporting to participants and writing other reports, as needed
• evaluating programs and planning additional program services

The eight tasks do not necessarily follow any rigid time pattern; that is, each should be considered as ongoing. Establishing the program, for example, does not mean that the agency's goals are "written in concrete." Obviously, one should be flexible since the needs of agencies change as do the needs of individuals. Similarly, examining and selecting tests are continuing tasks. Using tests and test results are not the last two steps of the process but are part of an unending chain of activities that should lead to the ongoing development of assessment, guidance, training, placement, and other program elements. So that they stand out more easily, the major guidelines have been underlined.

Testing is a complex activity. It is in some ways an art, in some ways a science. These guidelines, therefore, are not to be used as a programmed system. Not all of the points may be applicable in every situation. There also is some minor overlapping of some of the items. The worksheets found at the end of each task are intended to assist test users in developing a program based upon analysis of a number of important elements in the entire process. For each of the subtasks, the user determines the steps that should be taken locally. Additional space may be needed for some responses.

ACTION PLANNING GUIDELINES

Task 1:
ESTABLISHING THE ASSESSMENT PROGRAMS

1.1 *Make certain that the overall assessment program is in place and that the program operates as part of the agency's overall goals.* The purposes of assessment should be developed by all the agency staff who will either directly or indirectly be involved with testing or the use of test results. Setting goals will help to increase the efficiency of the agency's service delivery and should help to determine the cost and scope of the program.

1.2 *Assessment should be related to the specific needs and priorities of the local agency setting.* By paying careful attention to such issues as the effects of assessment on other service delivery components, the assessment program can be constructed to fit smoothly within the entire service delivery operation.

1.3 *Identify a planning committee of those who have responsibility for testing or related program areas.* The committee's role should be to develop, monitor, and evaluate the program based on predetermined criteria. In terms of implementation, one key person should be identified as the primary coordinator. In addition, all staff who will be affected by the program should be involved and informed of developments. If necessary, consultants should be sought for additional advice.

1.4 *Analyze the resources that are available,* e.g., trained personnel, financial resources, and physical facilities. Attempt to determine, as accurately as possible, program costs in terms of these factors.

1.5 *Determine whether the testing program will be conducted in-house or subcontracted to local agencies.* For some agencies this decision may be determined by the regulations under which they operate. Cost and availability of in-house staff also may be determining factors.

1.6 *Select and train staff who will be involved in the program.* Selection should be based on experience and competency in assessment, potential for learning such skills, interest, motivation, and sensitivity. The training should be in testing methodology, and orientation to the life experiences of the participants with whom they will be working also is of value. This will give personnel some perspective in dealing with participants. Empathy for participants is extremely important. Training should be made available through consultants, inservice workshops, and courses in tests and measurement at local colleges or universities, the United States Employment Service offices, or a commercial test vendor.

1.7 *Make certain that the program is in compliance with the "Uniform Guidelines on Employee Selection Procedures."* See the *Federal Register,* Volume 43, Number 166, August 25, 1978, pp. 38290-38315. The guidelines have been adopted by the Equal Employment Opportunity Commission, in conjunction with the Civil Service Commission, Department of Justice, along with the prohibition of discrimination in employment practices on the grounds of race, color, religion, sex, handicap, or national origin. The guidelines are presented in the following three major parts: (a) general principles—including a definition of discrimination, application of the guidelines, and selection procedures; (b) technical standards—including items on job analysis, prior training or experience, and operational use of selection procedures; (c) documentation of impact and validity evidence—including items in criterion-related validity studies and evidence of validity from other studies.

ACTION PLANNING WORKSHEET 1

The steps that have been or *should be taken* locally are as follows:

1.1 (a) Our overall agency goals are:

(b) The purposes of our assessment program are:

1.2 Our specific needs and priorities are:

1.3 (a) Our planning committee is made up of:

(b) Their roles are:

1.4 In terms of staff, funding, and physical facilities, our resources are:

1.5 Our testing program will be conducted in-house or subcontracted because of the following factors:

1.6 (a) Our criteria for selecting staff are:

(b) Our procedures for training staff are:

1.7 Our program is or is not in compliance with the "Uniform Guidelines" because of the following factors:

Task 2:
ANALYZING PARTICIPANTS' NEEDS

2.1 *Assess the participants' general needs by carefully considering the following dimensions:*

- The target populations to be served
- Additional groups—if any—that should be served
- General characteristics of the participants—basic needs, backgrounds, capabilities
- Participant needs that can be addressed by the current mix of available services
- Participant needs not being met or that cannot be met
- Types of information available about participants, e.g., educational history, work history, prior assessment findings, and eligibility data

2.2 *The participant's performance should be judged in relation to criteria established at the local level.* The objectives should be to determine what individuals require for employability and to target services specifically to these needs.

2.3 *Work closely with the organizations that can supplement your information needs,* e.g., community-based organizations, church groups, welfare agencies, law enforcement and parole agencies, armed forces recruitment centers, and the school systems. Testing results should be integrated with existing records relating to both the strengths and shortcomings of individual participants.

2.4 *Determine the overall test-taking level of individual participants.* In particular, review their records to determine their degree of reading and mathematical literacy. Discuss their feelings about "test taking." It may, however, be difficult to determine true feelings.

2.5 *Be alert to any special needs of participants.* Remember that some participants may not need to go through an entire assessment process; remember, too, that intake and referral involve judgment and counseling, both of which are part of the assessment.

ACTION PLANNING WORKSHEET 2

The steps that have been or *should be taken* locally are as follows:

2.1 Our participants' general needs can be summarized in the following way:

2.2 The specific criteria established for a participant's performance include the following elements:

2.3 (a) Linkages have been established with the following organizations:

(b) Contacts still need to be made with:

2.4 Test-taking levels of participants have been determined by a review of the following records:

2.5 The following special needs have been identified:

Task 3:
ANALYZING PROGRAM SERVICES

3.1 *Relate your program services as closely as possible to local community needs.* Carefully consider these important factors: the overall employment and training needs of the community and the nature of the specific local labor market conditions (supply and demand).

3.2 *Assess your agency's needs in terms of program services and potential services,* for example:

- Programs, services, and resources currently available, e.g., career orientation and exploration, work experience programs, basic skills/remediation, employability skills, job search skills, occupational skills training, on-the-job training, placement, apprenticeships, follow-up, follow-through
- Follow-up testing and counseling, especially in terms of placement
- Jobs currently available for participants
- Program options that could be available—both short and long range
- Relevant factors such as costs, time limitations, and staff capabilities for needed services

ACTION PLANNING WORKSHEET 3

The steps that have been or *should be taken* locally are as follows:

3.1 (a) The overall employment and training needs of the community are:

(b) The relevant labor market conditions are as follows:

3.2 (a) Our program services consist of the following:

(b) Our potential services are:

Task 4:
EXAMINING TESTING RESOURCES

4.1 *Determine the measurement areas needed for your programs,* for example, areas relating to:

- Placement in training—interests, job-related abilities, aptitudes, attitudes, and achievement levels
- Skills needed for job placement—specific job skills, unique job requirements, specific employer demands, specific worker responsibilities, skills regarding special tools or instruments
- Worker traits for job placement—tolerance levels, temperament, motivation, etc.
- Counseling and guidance

4.2 *Explore the types of tests and testing systems that are most applicable to your program and participants,* for example, those that appear to be most appropriate for:

- Determining participants' potential for success
- Placing participants in training programs
- Placing participants in the appropriate job
- Counseling services
- Planning programs and assessing potential services

4.3 *Examine the tests carefully.* Consider the following actions:

- Send for specimen sets. Carefully review the test manual—its purposes, technical aspects, scoring time. Examine the reading levels, administrative procedures, clarity of instructions, and data on reliability, validity, and norms.
- Read the critical reviews of tests in the following two major resources:

  (a) Buros, Oscar K., ed. *Tests in Print II (TIP II). An Index to Tests, Test Reviews, and the Literature on Specific Tests.* Highland Park, NY: Gryphon Press, 1974.

  (b) Buros, Oscar K., ed. *The Eighth Mental Measurements Yearbook.* Lincoln, NE: University of Nebraska Press, 1980.

  These two volumes are comprehensive and should provide useful information on nearly every test that has been published. Also see the bibliography for a list of other suggested readings.
- List the strengths and weaknesses of tests currently being used in your program—as well as tests which you are considering. Compare the two lists.
- Visit sites where testing is part of the services. Talk to other users of tests. See Appendix A.
- Take the test yourself to determine appropriateness, ease of scoring, etc.

4.4 *Establish your own criteria for test selection and know what testing alternatives exist.* Hundreds of tests are available. It can be "mind-boggling" for users to sort out the field. In order to assist you in selecting tests and in setting test specifications for individuals and groups, numerous descriptions of tests have been included here. Hopefully, they will aid you in analyzing available options and developing your own criteria for test selection. It also is recommended that test users become familiar with the standards for educational and psychological tests developed by the American Psychological Association. See Appendix B for a partial listing.

ACTION PLANNING WORKSHEET 4

The steps that have been or *should be taken* locally are as follows:

4.1 (a) The primary measurement areas for which we need to test are:

(b) Additional areas that should be considered are:

4.2 The types of tests and testing systems that are most applicable to our participants are:

4.3 The following activities have been conducted:

- Sending for specimen sets
- Reading test reviews
- Listing strengths and weaknesses of current—and potential—tests
- Visiting sites and talking with other users
- Taking the test ourselves

4.4 After reviewing the detailed descriptions of tests, the following criteria have been established for test selection:

Task 5:

SELECTING TESTS AND TESTING SYSTEMS THAT

- **Are compatible with goals of the agency**
- **Are appropriate for participants**
- **Are relevant to program services**
- **Provide sufficient information in terms of the purposes for which they are to be used**

5.1 *Tests should be selected in light of the participants your agency serves, how your agency operates, and the types of services provided; in short, tests should be selected to fit local circumstances.* Every test has its own special uses, strengths, and limitations. It is important to view tests as inspirations for ideas and not necessarily as "shopping lists" from which tools can be selected without careful examination. The primary tasks are to know your needs, your participants, and your tests.

5.2 *In selecting tests, attempt to meet the needs of all who are involved.* Particular consideration should be given to the employment needs of the local community as well as to organizations providing the participants with the needed services.

5.3 *Tests should relate to particular occupational areas.* For example, scales on an interest inventory should relate to occupational requirements; attitude and value scales should relate to work situations.

5.4 *The selection of tests is based largely upon the purpose they will serve; hence, there should be a reason why a particular test is given to each participant. Each device should serve a practical purpose; however, be sure not to overtest.* With respect to the time it takes to administer a test, the length of time should be based on the participant's needs rather than the program needs.

5.5 *The participant's background, literacy level, and willingness to undergo testing should influence the types of techniques selected. Some instruments can better accommodate a particular participant's characteristics.* In one research study of the assessment of the disadvantaged by the Mark Battle Associates (1976), 144 instruments were tested; each may be valid under specific circumstances.

5.6 *Often several tests will be needed. A range of instruments should be available*—for low-literacy participants, for those interested in a skilled or technical occupation, for those who need additional academic training, and the like. Two important questions to ask are: what do you want to find out about the participants and what tests will give this information. Remember that no single measure will be as accurate as multiple measures. This does not necessarily mean that many tests need to be administered but that test information should be compared to participant estimates, staff observations, and interview information. If multiple sources provide discrepant data, further information will be needed to reconcile these discrepancies.

5.7 *Attempt to select instruments that relate to realistic career planning, that is, tests that have some value in predicting training and occupational success.* Also remember that there are no infallible test instruments; some tests are more valid than others.

5.8 *Costs, reusability, and sophistication of the staff should help guide test selection.*

5.9 The United States Employment Service (USES) suggests points to keep in mind when selecting tests:

- *They* (the tests) *must be occupationally oriented if they are to be useful in vocational counseling and selection.*
- To the extent possible, *they should be oriented to the USES "Dictionary of Occupational Titles" used by placement interviewers and counselors.*
- *They must be useful with the wide variety of target groups:* young and old, the well-educated and the educationally deficient, inexperienced applicants for entry jobs and experienced and trained applicants, applicants for the skilled trades and for semiskilled and laborer jobs.
- *They must be simple to administer and score; the results must be readily interpretable.* (USES, Report No. 31, 1977, pp. 1-2).

5.10 *Be wary in selecting "projective tests."* Many experts feel that these tests are not appropriate except as a clinical instrument and often only for therapeutic purposes. The Mark Battle Associates' report (1976) cites one expert who notes that projective responses can be meaningfully interpreted only when the examiner has extensive information about the circumstances under which they were obtained and the aptitudes and experiential background of the examinee. The report indicates that while projective techniques can be useful under certain conditions, such tests are highly questionable for training and employment programs.

5.11 *Analyze the strengths and weaknesses of traditional paper-and-pencil tests.* When compared to locally constructed tests, standardized paper-and-pencil tests require no staff time for development; many will yield scores that can be compared with those of other groups. However, since some significant shortcomings are evident, it is important to be aware of the problems inherent in using these tests. The following list summarizes these major shortcomings:

- Individual test items may be at a relatively high reading level and may reflect cultural content of which the disadvantaged have little knowledge.
- Some tests do not seem to bear any significant relationships to the individual characteristics pertinent to job success for most of the jobs the disadvantaged will be seeking (Backer 1979b, p. 6).
- Most of these tests are similar to classroom tests with which many disadvantaged persons have a history of failure, and which, therefore, may make them feel anxious and uncomfortable.
- Some tests have written directions at a reading level higher than that of the test taker. If directions are not understood, the test measurement may not be valid.
- Some disadvantaged persons have limited experience with tests of any kind and do not have the "test wiseness" important to yielding test results that fairly estimate characteristics and capabilities.
- Item content designed for children but administered to adults may be simple enough in reading level but uninteresting or insulting. (Backer 1979b, p. 6).

5.12 *Analyze the strengths and weaknesses of work sample systems.* Work samples are standardized job performance tasks designed for use primarily in developing the employability of disadvantaged individuals. The technique consists of the work samples, a structured environment in which they are performed, and evaluations of behavior based on observations. A most thorough analysis of work samples was prepared by Botterbusch (1980). Anyone responsible for selecting a commercial system should read this analysis. His major points are paraphrased below:

- Investigate the range and type of jobs that are available in the local labor market and the training opportunities available to participants.
- Check the final report format of the work sample to determine what information it contains; decide what needs to be included in these areas and then find or develop the evaluation tools that best fit the participants' needs.
- Know the reasons why you wish to purchase the system. Probably none will meet all the needs in terms of jobs and training. A facility, however, could develop its own evaluation based on job or work samples taken from local industry. (pp. 1-4)

Botterbusch also discusses the possibility of carefully selecting individual work samples from several systems and combining them into a unified system specific to the needs of the facility. He suggests that the purchased system could be integrated with facility-constructed devices, other evaluation systems, on-the-job evaluation, and psychological tests.

5.13 *Be sensitive to the data on reliability, validity, and group norms.* While Bruno (1978) states that one should not hesitate to use an instrument simply because it has not been proven beyond a doubt to be valid, the Mark Battle Associates study (1976) notes that tests lacking in job-related validity have no place in selection and placement testing programs.

The purpose of test validation is to establish an objective and standardized instrument that measures or predicts the behavior of individuals. Such standardization and objectivity enables the user to compare individual test scores with a norm and to eliminate factors that would create test bias. Since no test is completely bias-free, it is important to examine how the test was constructed and with what groups of people the norms were established. The Mark Battle Associates study suggests that this is particularly important for employment and training programs that serve a diverse target population, in order to ensure that all persons—regardless of racial, cultural, or ethnic background—have an opportunity to participate in all types of programs. Since tests are used in arriving at decisions that may have great influence on the ultimate welfare of those tested, test users should be sensitive and should apply high standards of professional judgment in selecting and interpreting tests. Producers have the responsibility of providing sufficient information about each test so that users will know how reliable a test is for their purposes. The Mark Battle Associates study recommends that CETA prime sponsors who include testing in their programs ensure a test's validity for the groups with which it is to be used.*

*For concrete examples of how to check reliability and determine validity, see McCaslin and Walker's *A Guide for Improving Socially Developed Career Education Measures,* R and D Series No. 167, The National Center for Research in Vocational Education, The Ohio State University, 1979.

ACTION PLANNING WORKSHEET 5

The steps that have been or *should be taken* locally are as follows:

5.1 Local circumstances that might affect our selection of tests are:

5.2 The specific needs of the employment community—and service providers—in relation to test selection are as follows:

5.3 The following occupational areas are relevant to the tests being considered:

5.4 The specific purposes of the tests to be selected are as follows:

5.5 The following tests appear to accommodate our participant characteristics:

5.6 Resources exist to enable us to purchase _____ number of tests or testing systems.

5.7 The following career planning elements are being considered in selecting tests:

5.8 The following factors have been considered to assist us in selecting tests:

Costs
Reusability of materials
Staff backgrounds

5.9 The following selection criteria also have been considered:

Orientation to occupational areas
Orientation to the *Dictionary of Occupational Titles*
Relevance to target groups
Ease of administering, scoring, and interpreting

5.10 The following "projective tests" are being considered (carefully) for possible use in the following way:

5.11 (a) The following are the major strengths and weaknesses of the paper-and-pencil tests currently being used:

(b) The following appear to be the major strengths and weaknesses of the tests being considered:

5.12 (a) The following are the major strengths and weaknesses of the work sample systems currently being used:

(b) The following appear to be the major strengths and weaknesses of the systems being considered:

5.13 (a) The most important data on reliability, validity, and group norms of the tests we are using currently are as follows:

(b) The most important data on reliability, validity, and group norms of the tests we are considering are:

Task 6:
SETTING TEST SPECIFICATIONS FOR PARTICIPANTS–INDIVIDUALS AND GROUPS

6.1 *Establish individual objectives for assessment.* Each participant should be treated as an individual. Participant involvement in setting objectives is important. Participants often are well aware of what information about their vocational needs, interests, and abilities may be relevant to their employment objectives.

6.2 *Decide what other specific information is needed about participants prior to testing.* Also decide whether some (or all) of the information needed about an individual may be obtained through testing and whether a particular test is useful in obtaining information for some (or all) of the participants.

6.3 *Determine which types of tests are needed for participants in various situations.* Set specifications for each participant. Some examples are:

- A test for mechanical aptitude . . . that does not require a high reading level
- A test for literacy for a low functioning participant . . . that does not require a high reading level
- A nonverbal test of general learning ability . . . that is available in Spanish

Determine each participant's test-taking ability, whether the test takers are "high literacy" or "low literacy" in reading and mathematics and, as in some cases with disabled persons, whether the tests need to be adapted or modified.

The idea of custom tailoring assessment to fit each participant is an important one and should be carefully explored. Individuals having similar needs could be tested in groups—as long as each person is treated uniquely, as long as individual needs are considered, *and as long as the instrument lends itself to group use.*

6.4 *Provide participants with the exact reasons for selecting each test.* For example, explain what a "sales aptitude" test measures and how the results relate to a variety of sales jobs. Also, explain how results will be used, exactly what the results are, and what they mean.

ACTION PLANNING WORKSHEET 6

The steps that have been or *should be taken* locally are as follows:

6.1 The following objectives have been established for individual participants:

6.2 Other information items needed about participants include the following:

6.3 Test specifications for participants include the following factors:

6.4 The reasons for using a test have been shared with the participants. These include the following points:

Task 7:

USING TESTS AS TOOLS FOR GATHERING INFORMATION

- **Administering**
- **Scoring**
- **Interpreting**
- **Adapting to participants**
- **Pretesting orientation**

7.1 *Use tests with appropriate caution and have them administered by qualified personnel.* Mangum and Walsh (1980), for example, suggest that no assessment tool has yet been devised that captures all the nuances of motivation, that tests the reaction of the individual to situations not yet experienced, or that is foolproof. They note that assessment is a useful tool to be used with due caution and healthy skepticism.

7.2 *Be aware of "what works" for others.* Research on testing indicates that several practices work well. The following examples were reported by Mangum and Walsh:

- Collecting as many existing records as are available on each person enrolled in the program
- Maintaining close linkages with agencies, especially the schools, which are likely to maintain files on enrollees
- Testing in conjunction with other program components, e.g., orientation, prevocational training, and counseling

7.3 *Adapting tools as the situation calls for it.* Backer (1979a) indicates that many assessment techniques may not be usable without appropriate adaptation. Program developers may need to use basic criteria for evaluating such techniques when determining whether a device they are thinking of adopting needs to be adapted. He points out, for example, that some users of the Comprehensive Occupational Assessment and Training System (COATS) have found that not all components are relevant to their needs. Adaptation may consist of deleting one or more components. Backer also notes that "adaptation is a process that proceeds at the adaptor's peril unless care is taken to see that there is integrity to what remains and that the information lost by eliminating or changing certain portions is information the agency can afford to lose" (p. 46).

7.4 *Use pretesting orientation materials as needed.* These materials help reduce participants' anxiety, increase understanding of how the assessment will proceed, and help establish its relevance to later employment and training services. Through the use of pretesting materials, it is often possible to identify individuals for whom standard paper-and-pencil tests are inappropriate because of low reading levels. These persons may be guided into alternative procedures (e.g., interviews, work sampling) in which their lack of experience with testing will not interfere with an effort to identify job-related personal characteristics.

7.5 *Tests should be given when a specific purpose or rationale has been established.* Assessment traditionally is viewed as a process that is completed early in the program. Nevertheless, assessment information should be collected throughout the sequence. This is important for two reasons: continuous assessment can provide a more accurate indication of a participant's skills, abilities, interests, and work attitudes; and it also can assist staff in their efforts to design effective activities for training and job placement.

A number of factors should be considered in deciding when during the process testing is to be done. The program applicant generally has little motivation for involvement in the program. It is important not to let too much time lapse between the initial application and the administration of the test. Another reason for avoiding a time lapse is that many applicants have a history of poor testing experiences and will be more inclined not to show up for a testing session if the fear of testing is allowed to build for several days. Tests should be scheduled in such a way that they can be scored and the results used in counseling as soon after the testing as possible. This immediate application is another factor in keeping participants from dropping out of the program.

7.6 *Train your staff in the use of tests.* A trained, sensitive staff is essential. Some devices, particularly work samples, offer training for people purchasing the materials. Training in the use of paper-and-pencil tests is included in graduate work in the field of psychometrics. The training required for use of the United States Employment Service developed tests, the GATB and the NATB, may be obtained through the local state employment security agency office. A tester's knowledge of "real world options" will help put the use of test results into a concrete framework and also is an essential part of test interpretation.

7.7 *Clarify the responsibilities of test coordinators.* The following are possible areas of responsibility:

- Provide leadership in selecting and scheduling tests.
- Evaluate new tests and make recommendations for or against the use of a particular test.
- Requisition the necessary materials and distribute them to examiners.
- Train examiners and proctors in administering tests.
- Make arrangements for scoring and provide analysis of scores.

7.8 *Specify the concrete duties of those who administer tests.* The following are sample duties:

- Read the entire manual. This is essential if it is the first time the tester has administered the instrument.
- Take the test yourself. Read the directions, see how to mark the answers, note the time limits.
- Provide a supportive atmosphere for the testing situation.
- Have all the materials assembled for quick distribution.
- Read all directions to participants clearly and distinctly.
- Make sure the test takers understand what they are to do before they begin.
- Allow time for questions.
- Follow timing procedures.
- Observe the test takers. Make certain they understand the instructions, that they are on the proper page, and that their answers are in the designated places.
- Assign proctors if there are large numbers of persons taking the tests.

7.9 *Score each instrument accurately.* If a test is hand scored rather than computer scored, it is important to have well-trained staff to score the testing devices. Periodic double-checking on scoring accuracy is desirable.

7.10 *Interpret grade level scores—with extreme caution.* Throughout the literature on testing, the concepts of grade levels and competency levels are discussed. It is important to consider these concepts carefully. The testing and reporting of reading and mathematics skills on the basis of grade levels often are viewed as a poor approach to testing; however, it is generally accepted as the best technique currently available. An alternative is to use tests that are based on the actual skills required by specific occupations. This is especially helpful if results are used to place participants on the job or in a skills training program. In order to assess occupationally related competencies, instruments need to be used that reflect those competencies. Competencies—both basic skills and attitudinal—can be identified with significant input from private sector employers who probably know better than anyone else what skills are essential for one who wishes to work in a specific occupation.

There are a number of advantages to occupationally relevant testing. The first is that the use of such tests usually indicates the parallel use of an individualized competency-based occupational skills training program. It also is reasonable to assume that the development of such instruments would follow or be done in conjunction with the development of individualized competency-based skill training. Another advantage is that it allows participants to begin training at the level needed rather than at a level they already have surpassed. This type of testing also can be used to measure student progress in a training program that is individualized and competency based.

ACTION PLANNING WORKSHEET 7

The steps that have been or *should be taken* locally are as follows:

7.1 The following specific cautions are applicable to our local situation:

7.2 The following practices are being adhered to:

- Collecting existing records
- Maintaining linkages
- Testing in conjunction with other program components

7.3 The following adaptations of instruments are being considered:

7.4 The following pretesting orientation materials are being used or being considered:

7.5 (a) The following times for assessment have been established:

(b) The rationale for these time periods is as follows:

(c) The following amount of time generally elapses between the time the initial application is made and the time tests are administered.

(d) The following amount of time generally elapses between the time when the tests are scored and when the results are used in counseling sessions:

7.6 The following provisions have been made for staff training:

7.7 The following responsibilities of test coordinators apply to our agency:

7.8 The following duties have been specified for test administration:

7.9 Scoring of tests is done by the following method and is double-checked periodically by:

7.10 (a) The following procedures are adhered to in interpreting scores:

(b) In addition, the following approaches are considered when interpreting tests: grade level scores and competency levels.

Our position on this issue is as follows:

Task 8:

USING TEST RESULTS

- **Planning EDPs**
- **Counseling and instructing**
- **Reporting to participants and writing other reports as needed**
- **Evaluating programs and planning additional program services**

8.1 *The use of test results involves a number of important activities.* Backer (1979a) includes the following:

- Debrief the participants following the completion of testing.
- Prepare the assessment report.
- Provide feedback to the counselors, instructors, and other relevant staff.
- Provide for the storage of whatever records are necessary for follow-up with the participants, program monitoring, and evaluation.
- Evaluate assessment programs and recommend improvements based on evaluation results. (pp. 38-39)

8.2 *Share the results with participants who must understand what results mean and how they might reflect on their future goals.* The importance of feedback cannot be overemphasized. Provide participants with information that enables them to make better judgments about themselves. The process should be done in conjunction with participants. During the "debriefing," participants may provide additional information that will help in understanding the results. This also will help allay their anxiety and provide an opportunity for initial counseling about the use of the results. Use a team approach in working with participants, such as involving counselors, instructors, and participants.

There also is another important type of feedback, namely, feedback to the intake and assessment unit. Once the participant has been tested and enrolled in a program, seldom does this unit hear anything more. However, a constant feedback would allow the staff to adjust their procedures or alter their approach as needed.

8.3 *Use the results with appropriate caution. Do not overgeneralize.* Tests, like all other tools, need to be handled with great care. The following points should be kept in mind:

- *Results should not be permitted to limit unnecessarily the options available.* Many tests are reasonably good measures of the "threshold ability" to perform a particular task. A number of experts point out that scores beyond this threshold have little capacity to predict work or training performance. In such instances, scores should not be used beyond the level for which validity can be established.
- *Tests should not exclude anyone from the program but should be used to identify areas in need of development.*
- *Tests can be used to increase understanding about how an individual's characteristics might relate to the requirements and satisfaction potential of available jobs, as well as*

to explain the problems that might be created by low test scores, including employer rejection. In some instances, it is useful to give the participants practice in test taking so that they can improve their scores and avoid unfair discrimination based on their lack of experience with particular types of tests.

- *Tests should be interspersed with other types of information gathering.*

8.4 *Use the results as an aid in developing Employability Development Plans (EDPs).* In order to implement the participant's initiatives, employment and training agencies are required to design programs that formulate local achievement standards or benchmarks for participants, develop a long-term employability plan for each, track development through individual achievement records, and match services with the participant's developmental stages.

The concept of "developmental assessment" is being used with increasing frequency. The term describes the process of determining each participant's strengths and weaknesses relating to basic competencies and the capability of the program for meeting identified needs, selecting an appropriate service strategy, and measuring progress periodically. Measuring gains in competency areas and progress toward goals is essential. Measurement should occur periodically, including at the time of completion of each service unit. Reassessment involves feedback and may lead to the revision of a participant's EDP.

A related concept, "developmental life span," implies that assessment cannot be isolated from one's total development. The process contains measurements that relate to an individual's total life span. Thus, assessment data should relate to the level of development at various identified stages of vocational readiness: the prevocational, the vocational education and training, the job or production realization, and the career enhancement phases. The approach is based on sequential growth as an individual progresses from phase to phase, requiring that certain competencies be acquired before one moves to the next step. Assessment cuts across each phase. Therefore, counselors attempt to establish a "participant's assessment matrix" for each participant. Once the matrix is completed, an EDP that prescribes the services appropriate for remedying the identified employability problems for each individual can be developed and implemented. While the nature of these plans varies, all EDPs should be based upon carefully administered and interpreted tests.

8.5 *Share results and interpretations with instructors of the various training programs.* Inform the instructors of the indicated strengths and weaknesses of the participants and, to the extent possible, whether the participants can "handle" the instructional material. Be as specific as possible in describing traits but remember that the results are only indicators and not "hard and fast" descriptors.

8.6 *Evaluate the effectiveness of the assessment techniques.* The following criteria have been suggested by Backer (1979a):

- Soundness and relevance of assessment results for decision making
- Impact on service delivery (measured in terms of stated objectives to provide counseling, training, or placement)
- Cost of the assessment technique or program (including costs of acquiring and implementing the technology, staff time and facilities, and the amount of time it takes to complete the assessment process)

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- Timeliness with which assessment results are provided in relation to other aspects of the service delivery operation
- Agency staff acceptance of the program and its results
- Client acceptance of the program and its results
- Unexpected payoffs and negative side effects, such as delays in other aspects of service delivery because of the need to assess at a certain point in the service delivery process (pp. 8-9)

8.7 *Tests also can be used effectively for evaluating overall program effectiveness,* e.g., standardized reading tests used as a measure of the effectiveness of remedial education programs. Tests also can provide useful measures of attitude change when this is a program goal.

ACTION PLANNING WORKSHEET 8

The steps that have been or *should be taken* locally are as follows:

8.1 The following uses of test results are being made:

- Debriefing participants
- Preparing reports
- Providing feedback to counselors, instructors, and others
- Storing records for later use
- Evaluating assessment programs and recommending improvements
- Other:

8.2 (a) The results of tests are shared with the participants:

- regularly
- seldom
- not at all

(b) The results of tests are shared with the intake and assessment unit:

- regularly
- seldom
- not at all

8.3 The following cautions are being considered in our use of test scores:

8.4 The following results are being used in EDP preparation:

8.5 The instructors of various training programs receive the following information on test results and interpretations:

8.6 The following data are being used in evaluating the effectiveness of the assessment techniques:

8.7 The following data are being used in evaluating the effectiveness of overall program services:

EXPLORING TESTS AND TEST SYSTEMS

Charting the Alternatives

As guideline 4.4 indicates, sorting out the testing options can be a "mind-boggling" experience. In order to make this task somewhat more manageable, the following chart has been prepared. Test descriptions are included in the five sections following the chart. Each test has been assigned a number, for example, A.2—the Basic Occupational Literacy Test (BOLT) is described in Section A and is listed as test number 2.

AREAS OF MEASUREMENT	TYPES OF TESTS	TARGET AUDIENCES (if indicated)	TITLE OF TEST	SECTION REFERENCE AND TEST NUMBER
Academic skills: • competency application • community resources • occupational knowledge • consumer economics • health • government and law	paper-and-pencil	adults youths	Adult Performance Level Program: Adult and High School Surveys	C. 32
Academic skills: • arithmetic • reading	paper-and-pencil	educationally disadvantaged adults	Basic Occupational Literacy Test (BOLT)	A. 2
Academic skills: • arithmetic • vocabulary	paper-and-pencil	–	GATB/NATB Screening Device	A. 6
Academic skills: • vocabulary • reading • spelling • arithmetic	paper-and-pencil	adults	Adult Basic Learning Examination (ABLE)	A. 1
Achievement: • reading • mathematics • language	paper-and-pencil achievement battery	adults—low reading levels	Test of Adult Basic Education (TABE)	C. 52

Achievement: • reading • spelling • arithmetic	paper-and-pencil	–	Wide Range Achievement Test (WRAT)	C. 55
Achievement: • verbal • numerical	tape recorded	participants with limited reading skills	Fundamental Achievement Series	A. 5
Aptitude and achievement	paper-and-pencil battery	–	Dailey Vocational Tests: Technical Scholastic Spatial Visualization Business English	C. 37
Aptitudes: • learning ability • verbal aptitude • numerical aptitude • spatial aptitude • form perception • clerical perception • motor coordination • finger dexterity • manual dexterity	paper-and-pencil	–	GATB: General Aptitude Test Battery SATB: General Aptitude Test Batteries	E. 72
Aptitudes: • judgment • comprehension • arithmetic	paper-and-pencil comprehensive battery	–	Flanagan Aptitude Classification Tests	C. 39
Aptitudes: • intelligence • verbal aptitude • numerical aptitude • spatial aptitude • form perception • clerical perception • motor coordination • finger dexterity • manual dexterity	paper-and-pencil test battery	disadvantaged applicants	NATB: Nonreading Aptitude Test Battery	A. 11

Aptitudes: • motor • spatial • clerical • perception • numerical • verbal	work samples	rehabilitation population	Micro-TOWER	D. 62
Aptitudes: • personal-social • mechanical • general sales • clerical routine • computational • scientific	paper-and-pencil test battery	–	Aptitude Tests for Occupations	C. 33
Aptitudes: • verbal reasoning • numerical • abstract reasoning • space relations • mechanical reasoning • clerical speed and accuracy • spelling • language usage	paper-and-pencil battery	–	Differential Aptitude Tests	C. 38
Autobiographical information	biographical questionnaire	disadvantaged applicants	Biographical Information Blank	A. 3
Clerical skills	typing, dictation, spelling	–	Clerical Skills Tests	E. 73
Clerical skills	paper-and-pencil	–	General Clerical Test	B. 25
Cognitive skills: • job knowledge • job seeking • reasoning • interests	paper-and-pencil battery	disadvantaged youth	Program for Assessing Youth Employment Skills (PAYES)	A. 14
Coping skills: • behavior styles • activity preference • values	self-description inventory	–	Job Analysis and Interest Measurement (JAIM)	C. 43
Interests	checklist	–	Self-Interview Checklist	A. 15
Interests	checklist/ interviewing aid	–	Interest Checklist (U.S. Employment Service)	E. 74

Interests	paper-and-pencil	youth, adults	Kuder Occupational Interest Survey	B. 27
Interests	interest inventory	youth	Ohio Vocational Interest Survey	C. 48
Interests	paper-and-pencil inventory	males only	Minnesota Vocational Interest Inventory	C. 47
Interests	visual, nonreading format	youth	Picture Interest Exploration Survey (PIES)	A. 13
Interests and aptitudes	self-administered checklist including a survey of basic skills (experimental)	disadvantaged clients	Job Interest and Literacy Level Evaluation Instrument (JILL)	C. 44
Interests and attitudes	paper-and-pencil inventory/visuals	–	Wide Range Interest-Opinion Test (WRIOT)	C. 56
Interests: • occupational preferences	interest inventory	vocationally and college-oriented	California Occupational Preference Survey (COPS)	C. 35
Interests: • basic • occupational	paper-and-pencil inventory	youth and adults including rehabilitation	Strong-Campbell Interest Inventory	C. 51
Interests, experiences, and skills	paper-and-pencil inventory	youth	Vocational Interest, Experience, and Skill Assessment	C. 53
Interests: • preferred activities • competencies • self-estimates	self-administered scales	youth and adults including rehabilitation	Self-Directed Search	C. 50
Job matching, employability attitudes, work samples, living skills	multi-component assessment system	youth and adults, including rehabilitation participants	Comprehensive Occupational Assessment and Training System (COATS)	D. 58
Job preference	self-reporting questionnaire (experimental)	–	Tolerance for Bureaucratic Structure Scale	A. 18
Job performance factors, e.g., • speed • accuracy • mechanical aptitude • personality variables • attitudes • job aptitudes • skills	work sample battery	physically and emotionally disabled	Testing Orientation and Work Evaluation in Rehabilitation (TOWER)	D. 66

Job readiness	paper-and-pencil Spanish version (experimental)	–	Vocational Opinion Index	A. 21
Job-specific skills	work samples	special needs population	Singer Vocational Evaluation System	D. 64
Job-specific skills: • folding • pasting • stuffing • stapling • packing • measuring • collating • pattern making	work samples	severely disabled –mentally and physically	Wide Range Employment Sample Test (WREST)	D. 71
Knowledge of specific aspects of occupations: • trends • terminology • training	paper-and-pencil	youth	Knowledge of Occupations Test	C. 45
Manual dexterity	individually administered apparatus	–	Crawford Small Parts Dexterity Test	B. 23
Manual dexterity	individually administered	–	Hand-Tool Dexterity Test	B. 26
Mechanical ability: • sensory/ mechanical	paper-and-pencil, visuals (Spanish edition)	–	Bennett Mechanical Comprehension Test	C. 34
Mechanical aptitudes: • knowledge • space relations • shop arithmetic	paper-and-pencil	–	SRA Mechanical Aptitudes	B. 29
Mental ability: • analogies • arithmetic problems • judgment • following directions	paper-and-pencil	adults in business and industrial situations	Wonderlic Personnel Test	C. 57

Multiple factors: • simulated • assembly process • interests • interpersonal/ social skills • independent living skills	assessment techniques using different formats	mentally retarded	Pre-Vocational Readiness Battery Valpar 17	D. 63
Multiple factors: • general ability • Specific aptitudes • achievement • values	paper-and-pencil	–	Vocational Planning Inventory	C. 54
Multiple factors: • interests • temperaments • Aptitudes	work samples	explicitly designed for disadvantaged	Vocational Interest Temperament and Aptitude System (VITAS)	D. 69
Multiple factors: • job perceptions • tolerance for behavior variability • employee relationships	interview forms (experimental)	–	Mandell NYC Programs Interview Forms	A. 10
Multiple factors: • personality • job behaviors and attitudes • job satisfaction • job expectancy	test battery (experimental)	severely disadvantaged participants	Colorado Battery	A. 4
Multiple factors: • self-concepts • self-acceptance • reading comprehension • personal behavior	paper-and-pencil questionnaire (experimental)	–	Jorgensen Interpersonal Relationships	A. 9
Multiple factors: • verbal cognitive • sensory • motor abilities • integration (coping)	work samples	mentally retarded, learning disabled	McCarron-Dial Work Evaluation System	D. 61
Oral directions	cassette tape/ record	–	Oral Direction Test	A. 12
Perceptual and dexterity ability	battery of tests	mental levels above trainable mentally retarded	Talent Assessment Program (TAP)	D. 65
Personality variables	preference schedule	–	Edwards Personnel Preference Schedule	B. 24

Psycho-physical: • unilateral motor ability • bilateral motor ability • perceptual-motor coordination • intelligence • achievement • physical strength	psycho-physical tests	all intelligence levels, physically disabled	Hester Evaluation System (Phoenix Ability Survey System)	D. 59
Reading ability	paper-and-pencil	technical or vocational trainees	Industrial Reading Test	C. 42
Self-awareness: • values • needs	orientation inventory	–	Hall Occupational Inventory	C. 40
Self-awareness: • occupational choices • future plans • values	paper-and-pencil inventory	–	Harrington/O'Shea System for Career Decision Making	C. 41
Self-perception: • focus of control • need for achievement	short rating scales (experimental)	–	Tseng Rating Scales	A. 19
Skill and aptitude: • size discrimination • numerical sorting • range of motion • clerical • problem solving • sorting • simulated assembly • coordination • soldering	work samples	general population (industrially injured workers)	Valpar Component Work Sample System	D. 67
Skills: • self-evaluation and development • career awareness • decision making • employment seeking • work effectiveness • personal economics	paper-and-pencil	youth and adults	Career Skills Assessment	C. 36
Test-taking ability	miniature test battery	(pretesting orientation)	Pretesting Orientation Exercises (U.S. Employment Service)	A. 20

Test-taking ability	practice materials	(pretesting orientation)	Test Orientation Procedure	A. 17
Values, interests, aptitudes	self-assessment rating scales	youth	Rating Scales for Vocational Values, Interests, and Aptitudes	C. 49
Vocational competence: • motor skills • cognition • responsibility • social–emotional behavior	rating scale	mentally retarded	San Francisco Vocational Competency Scale	B. 28
Vocational needs: • authority • independence • responsibility	paper-and-pencil inventory	–	Minnesota Importance Questionnaires	C. 46
Work attitudes	self-administered paper-and-pencil	–	Work Environment Preference Schedule	B. 31
Work attitudes: • adjustment • satisfaction	paper-and-pencil inventory (experimental)	–	Work-Relevant Attitudes Inventory	A. 22
Work attitudes: • goals • beliefs • intentions	paper-and-pencil questionnaire (experimental)	WIN trainees	Goodwin Work Orientation Questionnaire	A. 7
Work behaviors: • tolerance for criticism • independence • cooperation • motivation • concentration • punctuality • safety awareness and habits	rating scale	mentally retarded	Work Behavior Rating Scale	B. 30
Work components: • sorting • assembly • basic tools • building maintenance • clerical • construction	work samples	handicapped and disadvantaged	Vocational Skills Assessment and Development Program Brodhead-Garrett	D. 70
Work motivation	interview format (experimental)	–	Indik Work Motivation Scales	A. 8

Work skills: • clerical • machine • craft	work samples	mentally retarded	Vocational Information and Evaluation Work Samples (VIEWS)	D. 68
Worker trait groups: • handling • sorting • inspecting • measuring • tending • manipulating • routine checking and recording • classifying and filing • inspecting and stock checking • craftsmanship • costuming • tailoring • dressmaking • drafting	work samples	disadvantaged and physically disabled	Jewish Employment and Vocational Service Work Sample System (JEVS)	D. 60
Worker trait groups from the *Dictionary of Occupational Titles*	organizing framework/ packet for work sample evaluation	disadvantaged and disabled participants	System Approach to Vocational Education (SAVE)	A. 16

NOTE: The descriptive terms used in the categories are, for the most part, those of the test publishers.

SECTION A:
EXPLORING THE RESOURCES IN CLIENT ASSESSMENT: A MANUAL FOR EMPLOYMENT AND TRAINING AGENCIES VOLUME II (Backer 1979b)

One of the primary sources for examining tests and testing systems is the analysis by Thomas Backer of test instruments for the disadvantaged. His focus was on both paper-and-pencil tests and work sample systems. However, since these systems were dealt with in greater detail by Botterbusch, this section reports mainly on the paper-and-pencil tests Backer reviewed. However, it also includes one work sample system (SAVE) and two sets of pretesting orientation materials.

1. *Title of Test: ADULT BASIC LEARNING EXAMINATION (ABLE)*

   Description: Measure of basic learning skills, using subject matter drawn from adult life

   Format: The test includes a vocabulary test, dictated so that no reading is required; an arithmetic problem-solving test, which can either be dictated or taken in conventional reading and response format; and a short screening test, called "SelectABLE," for use in determining the most appropriate level of ABLE for each adult applicant. Three levels of the ABLE battery are available, each geared to a particular educational level. Levels 1 and 2 require about two hours' administration time, and Level 3, about three hours. Scoring can either be by hand or (for Level 3 only) through the publisher's computer scoring service.

   Stage of Development: ABLE was developed to provide a general intellectual aptitude screening tool for use with disadvantaged adults, one that overcomes the traditional shortcoming of tests for low reading level involving items geared to children rather than adults. Extensive normative data and a test manual are available from the publisher, although there is no mention of the availability of validity data.

   Application: General screening for determining training needs or placement options

   Access: Available from the Psychological Corporation, 757 Third Avenue, New York, NY 10017

2. *Title of Test: BASIC OCCUPATIONAL LITERACY TEST (BOLT)*

   Description: Test of basic reading and arithmetic skills for use with educationally disadvantaged adults

   Format: On the BOLT, reading skills are assessed by a reading vocabulary subtest and a reading comprehension subtest; arithmetic skills are assessed by an arithmetic computation subtest and an arithmetic reasoning subtest. The subtests are available at varying levels of difficulty. The test may be scored either by hand or by using machine-scoring answer sheets.

   Stage of Development: The BOLT was developed to measure aptitudes using test-item content that is relevant for adults rather than children. The BOLT wide-range scale is used to indicate

what level BOLT subtest should be administered to a given client. In the BOLT manual, detailed information about test development, normative data, reliability data, and an in-progress validation program are given.

Application: General screening for determining training needs or placement options

Access: Information on availability of the test, answer sheets and test manual, as well as the wide-range scale for determination of appropriate BOLT subtests, can be obtained from state Employment Service offices.

3. *Title of Test: BIOGRAPHICAL INFORMATION BLANK (BIB)*

Description: Brief questionnaire eliciting autobiographical data from the examinee

Format: The BIB is a questionnaire form containing, in its present stage, 66 items of biographical information in the following categories: home and family situation—past and present; high school experiences and perceptions; work history including job turnover record; present job responsibilities and obligations; preferences and needs regarding work, the work place, and income; life goals and philosophy; self-image; and time organization habits. Items were specifically constructed for use with subjects reading on fourth- to sixth-grade levels. Much of the life-history data that BIB requests may be objectively verified, discouraging cheating or conscious distortion. On the other hand, since there are no right or wrong answers in the traditional sense, those having negative experiences with tests may be less threatened by the BIB. The BIB can be scored routinely by clerical personnel using scoring keys developed by the test's creators.

Stage of Development: The BIB was developed under a research contract from the Department of Labor by Richardson, Bellows, Henry & Company, Inc. (RBH) and has been used in predicting length of participation in the Job Corps and for predicting job tenure among Employment Service applicants. In a study completed in 1975, the BIB was used to predict (1) three-month employment tenure among disadvantaged Employment Service applicants who had received no previous employment and training agency services prior to job placement, and (2) completion of job entry stages among Work Incentive program enrollees. Results of this study indicated that persons scoring higher on the BIB were more likely to remain employed or to complete job entry on the WIN program at significantly higher rates than those in the lower score groups. In the various research reports mentioned (by Backer), substantial evidence about the reliability and validity of the BIB is available, along with some normative data.

Application: RBH advised the use of the BIB as a tool for identifying those most likely to benefit from services in WIN programs; by analogy, other seriously disadvantaged employment and training agency applicants could be identified using such a system. However, there are still some problems with the BIB that employment and training agencies would need to consider carefully before making operational use of the instrument at this time.

First, there was evidence, from RBH's own research, of reluctance by a number of the experimental participating cities to use the BIB as a part of the service process. Clearly, substantial education of employment and training agency staffs may be required to convince those who would have to use the BIB that it would be likely to have value and to give them careful training in its proper use.

Also, it is not clear from the research conducted so far whether the BIB is really picking out those individuals most likely to benefit from a particular service delivery process. In fact, because high scorers on the BIB may well be persons who would be likely to get a job even without receiving services, using the BIB as a selection tool (with a high score selecting into the program) may actually select for service those who need it least.

Also, since the use and nonuse cities in the 1979 study were allowed to self-select, there is no reliable way to identify and measure what other variables may have been operating in promoting a higher percentage of employment for those cities that used the BIB scores versus those that did not.

On the plus side, the BIB has now been administered to a very large group of seriously disadvantaged individuals. It has been refined a number of times, as have its scoring procedures.

Access: Richardson, Bellows, Henry & Company, Inc., 1140 Connecticut Avenue, N.W., Washington, DC 20036

4. *Title of Test: COLORADO BATTERY*

Description: Series of tests developed by the Colorado State University Manpower Laboratory for use in work with the severely disadvantaged

Format: The *Social Access Questionnaire (SAQ)* contains 89 items measuring six personality factors. It also contains questions about personal history. Items are either multiple-choice or use a bipolar agree-disagree answer scale. This test was designed to tap social and personality characteristics that contribute to "job deviance." Subjects fill out the measure either individually or in large groups. The *Work Requirements Rating Scale* is a 47-item questionnaire dealing with behavior on the job and is designed to measure the consequences of differing vocational attitudes among worker, supervisor, and employer. The *Importance Questionnaire* is a test of 20 items relating to job conditions or opportunities, each rated on a scale of from very important to very unimportant. The *Employment Satisfaction Questionnaire* has 20 items measuring job satisfaction on a scale from very unsatisfied to very satisfied (items were taken from the Minnesota Employment Satisfaction Questionnaire). The *Job Conditions Questionnaire* is an eight-page questionnaire concerning perceived work environment. The *Job Expectancy Rating* is a single-page rating form for evaluation by workers of six basic job conditions. The *Job Importance Prediction Scale* is a 12-item scale filled out by workers and supervisors to check for congruencies and discrepancies between the two groups regarding important job conditions. The *Self-Acceptance Questionnaire* is a 15-item yes-no measure of highly loaded self-evaluation items, e.g., concerning respondent's sexual behavior. The *Similarity Scale* is an 80-item checklist measuring identification with militant or activist groups.

Also part of this battery is the revised *Miskimins Self-Goal–Other Discrepancy Scale (RMSGO)*, which was discussed in Backer (1972) as being inappropriate for use with the severely disadvantaged and it, therefore, will not be discussed here.

These forms and instruments are presented in a *Research Manual* (Manpower Laboratory) that includes a copy of each device plus information concerning form, structure, intended use, mode of administration, reliability, and validity data.

Stage of Development: These instruments were developed under funding from the Department of Labor and were reported in a series of final report volumes on the multifaceted research

project called "Applied Programs in Manpower Development." To the writer's knowledge, they are not presently in use, and the data base supporting them is quite limited.

Application: These instruments would primarily be useful as an idea source for employment and training agencies.

Access: Copies of the *Research Manual* may be available from the U.S. Department of Labor.

5. *Title of Test: FUNDAMENTAL ACHIEVEMENT SERIES (FAS)*

Description: Two tape-recorded tests for use with individuals having limited reading skills, tapping knowledge and capabilities that an applicant may reasonably be expected to have acquired in the course of ordinary daily living

Format: The FAS-Verbal is a 30-minute test; it measures the ability to read signs, use telephone directories, and recognize and understand commonly used words. The FAS-Numerical also takes 30 minutes to administer; it measures the ability to tell time, recognize numbers, understand calendars, and solve numerical problems. The tape recordings ensure accurate timing and identical presentation to all who take the test, eliminating examiner bias. Integrated question booklets and answer sheets are provided. Scoring procedures and other details of administration are presented in a manual available from the test publisher.

Stage of Development: The Fundamental Achievement Series was developed for use in selecting applicants for job-training programs and covers the range from basic literacy to slightly above the eighth-grade level. Information on normative, reliability, and validity data is available in the publisher's manual.

Application: For use as a basic screening device in employment and training agency service programs

Access: Available from the Psychological Corporation, 757 Third Avenue, New York NY 10017

6. *Title of Test: GENERAL APTITUDE TEST BATTERY AND THE NONREADING APTITUDE TEST BATTERY (GATB/NATB) SCREENING DEVICE*

Description: A brief written test consisting of the wide-range scale of the Basic Occupational Literacy Test for use in determining whether a particular service applicant should be given the GATB or NATB

Format: The test consists of arithmetic and vocabulary items and is scored using two stencils. Further information on administration and scoring procedures is available in the *Manual for the GATB/NATB Screening Device.*

Stage of Development: Details on development and use of this device also are presented in the 1973 *Manual.* These include cutoff scores to be used in determining whether a given applicant should take the GATB or NATB.

Application: For employment and training agency assessment programs where both the GATB and NATB may be administered, to determine which test a given applicant should take

Access: Information about availability of the test, scoring stencils, and the *Manual* can be obtained from state Employment Service offices.

7. *Title of Test: GOODWIN WORK ORIENTATION QUESTIONNAIRE*

Description: Questionnaire designed to measure work orientations of WIN trainees

Format: The Work Orientation Questionnaire was devised to measure attitudes, goals, beliefs, and intentions with respect to the world of work. The questionnaire consists of several sets of questions about work that are to be rated on four-step "ladders" ranging, for example, from "agree" to "disagree." Both a self-administering form and a home-interview form, with questions read by the interviewer, have been created.

Stage of Development: Data have been gathered on some 1400 WIN trainees and were factor-analyzed to yield clusters of items defining work orientations. Goodwin suggests that, with appropriate refinement, the Work Orientation Questionnaire might be used to help WIN staff acquire more accurate perceptions of their trainees' work orientations for subsequent use in counseling and placement.

Application: Since this instrument was developed only in a preliminary research study and no extensive reliability or validity data are available, it should be considered primarily as a source of ideas for use in employment and training situations where measurement of work orientation may be important.

Access: Copies of the research report are available from Dr. Leonard H. Goodwin, The Brookings Institution, Washington, DC 20036.

8. *Title of Test: INDIK WORK MOTIVATION SCALES*

Description: Interview-format test designed to estimate work motivation

Format: The interviewer reads a collection of statements and asks the interviewee whether he/she agrees strongly, agrees mildly, is undecided, disagrees mildly or disagrees strongly. Also, data are collected by having the interviewee choose one of four possible endings to unfinished statements read by the interviewer. Six areas of motivation are assessed: the motive to work, the motive to avoid work, the expectancy to work, the expectancy to avoid work, the incentive to work, and the incentive to avoid work. In a research study, Indik found that these scales were modestly related to training and placement success for MDTA enrollees. An important finding was that the motivational characteristics that seem to facilitate stable employment are not necessarily those that facilitate success in training. No further work with this instrument apparently has been conducted, and normative, reliability, and validity data are not available.

Application: Since this instrument has received only research use so far, it would primarily be a source of ideas for employment and training agencies concerned with the measurement of motivation to work.

Access: Copies of the research report are available from Dr. Bernard Indik, Rutgers University, New Brunswick, NJ 08903.

9. *Title of Test: JORGENSEN INTERPERSONAL RELATIONSHIPS SCALES*

Description: Two instruments designed for a research study of the relationships of interpersonal facility to placement success

Format: The *Social Vocabulary Index* consists of six scales: (1) the *Self-Concept Scale*, a 20-item test of opinions of self consisting of statements beginning with "I am . . ."; responses are chosen from frequency alternatives (most of the time–hardly ever); (2) the *Self-Acceptance Scale*, a 20-item adjective checklist; (3) the *Ideal Self Scale* with the same items as the self-concept scale except that the statements are stemmed "I would like to be . . ."; (4) *Concepts of Others Scale* with the same items but stemmed "Other people are . . ."; (5) a *Vocabulary Scale* designed to measure subjects' reading comprehension; and (6) a *Social Desirability Scale* consisting of 33 statements about personal behavior which the subject is asked to rate true or false for him/herself.

The *Revised Interaction Scale*, the other instrument used in this study, is a two-part paper-and-pencil questionnaire that is used by both counselor and counselee to rate the counseling interaction.

Stage of Development: In a study using the two instruments with rural rehabilitation clients, significant differences in test scores were found between females who obtained their own jobs and those who had placement assistance. These modest results suggest some possible utility of the measures for predicting which clients need placement services. No other normative, reliability, or validity evidence is available.

Application: Since this instrument has been used only in research, it would primarily be a source of ideas for employment and training agencies concerned with measurement of interpersonal relationships as a component of success in obtaining a job.

Access: These instruments are available from G.Q. Jorgensen at the University of Utah, Salt Lake City, Utah 84112.

10. *Title of Test: MANDELL NYC PROGRAM INTERVIEW FORMS*

Description: Interview forms designed to gather data about job perceptions of Neighborhood Youth Corp (NYC) enrollees

Format: Questions for enrollees are phrased in simple language in these instruments. Since interviews are conducted individually, the interviewer is permitted to adapt wording of questions to the respondent's level of understanding. The forms used include a general section for all groups of subjects, with separate background forms for enrollees and supervisors and employers of NYC enrollees studied in this research. One of the study's purposes was to compare enrollee perceptions with those of supervisors and employers. During the interviews, data were collected for the following variables from supervisors and employers: skills, tolerance for behavior variability, employer–employee relationship, supervisor–employee relations, and employee benefits.

Stage of Development: These interview forms were developed for research uses only, and no validity, normative, or reliability data are available.

Application: The potential utility of these survey forms for other assessment purposes does not seem to be very great, although they could be used in certain assessment programs for obtaining perceptions of applicants regarding job-related variables.

Access: Copies of the research report are available from Dr. Wallace Mandell at Wakoff Research Center, Staten Island, NY.

11. *Title of Test: NONREADING APTITUDE TEST BATTERY (NATB)*

Description: The NATB consists of 14 tests measuring the same nine aptitudes measured by the GATB. It was developed for use with individuals who do not have sufficient literacy skills to take the GATB.

Format: The NATB measures aptitudes in the following areas: intelligence, verbal aptitude, numerical aptitude, spatial aptitude, form perception, clerical perception, motor coordination, finger dexterity, and manual dexterity. Apparatus tests are used for measuring finger dexterity and manual dexterity, and the other test portions are designed for paper-and-pencil format. It requires about 3¼ hours to complete; some of its subtests involve no reading or vocabulary skills at all. Others use familiar stimulus objects with which even the most seriously disadvantaged should be familiar. The NATB manual contains information on administration, scoring, and interpretation. Paper-and-pencil test booklets and answer sheets are integrated, and machine scoring is available through National Computer Systems in Minneapolis.

Stage of Development: The NATB was originally developed in recognition of the shortcomings of the GATB for use in employment and training agency services to the severely disadvantaged. Extensive normative and reliability data are available, and validity studies have been under way for some time.

Application: The NATB is an instrument of choice, particularly when the GATB/NATB Screening Device is used, for seriously disadvantaged applicants in employment and training agency service programs where a general measure of intellectual aptitude is required.

Access: Information about availability of NATB and associated manuals and scoring materials can be obtained from state Employment Service offices.

12. *Title of Test: ORAL DIRECTIONS TEST*

Description: Direct measure of an applicant's ability to understand and follow oral directions

Format: The applicant responds by marking the answer document in accordance with instructions dictated on a cassette tape or record. It requires 15 minutes to administer and is also available in a Spanish-language version.

Stage of Development: The *Oral Directions Test* was developed as an aid to selecting more able workers among applicants having a limited education and among applicants with limited knowledge of English. According to the test publisher, it is suitable for selecting applicants for maintenance and service work in public institutions, transportation systems, stores, hotels, etc., as well as in factories and shops. Information on normative, reliability, and validity data is available in a test manual.

Application: This test may have some applicability in employment and training agencies for use as a general screening device.

Access: Available from the Psychological Corporation, 757 Third Avenue, New York, NY 10017.

13. *Title of Test: PICTURE INTEREST EXPLORATION SURVEY (PIES)*

Description: A career interest inventory presented in a visual, nonreading format

Format: The PIES is designed to help in the investigation of individuals' vocational interests and to apply this information to pursuing career goals. A PIES test kit includes 160 color slides, 2 slide trays, 1 audio tape, 2 sets of career reference cards, 1 student-teacher manual, and 50 response sheets. Colored 35mm slides are utilized to depict 12 specific careers within each of 13 career clusters. The career-cluster system is based on the *Occupational Outlook Handbook* and is cross-referenced to the *Dictionary of Occupational Titles.* Each slide shows a worker's hands performing a task considered to be representative of a particular occupation within a career cluster. Users indicate interest in a particular career by circling the number of that slide on their response sheet. The survey may be administered individually, in a group, or self-administered. Users may determine their own "score," or interests, by simply counting the number of items they circled and then determining which career cluster contained the most items marked. Because hands are depicted performing tasks, the developer of PIES claims a minimum of distraction or bias in occupational selection due to physical attractiveness of the workers or ethnic, sex, or racial characteristics.

Stage of Development: PIES has been developed primarily for use with adolescents, and a validation study by Eubanks was conducted using this population. Normative, reliability, and validity data are available in Eubanks' report. Validity was assessed using a concurrent measure (comparison with other vocational interest test scores), and there is to date no concrete evidence as to the actual efficacy of PIES in predicting career selection or facilitating the career-counseling process.

Application: Employment and training agencies dealing with youth service programs might consider using PIES as a career exploration or counseling tool, although it lacks clear validity data.

Access: PIES is available from Education Achievement Corporation, P.O. Box 7310, Waco, TX 76710.

14. *Title of Test: PROGRAM FOR ASSESSING YOUTH EMPLOYMENT SKILLS (PAYES)*

Description: A battery of seven tests designed specifically for use with disadvantaged youth in guidance counseling

Format: PAYES consists of three separate booklets: Booklet 1 contains three attitudinal measures; Booklet 2, three cognitive ones; and Booklet 3, a vocational interest inventory. Job-holding skills, attitude toward supervision, and self-confidence are the three major attitude areas covered. Cognitive measures of job knowledge, job-seeking skills, and practical reasoning are also surveyed. The measures are designed for adolescents and young adults with low verbal skills; pictures help to clarify many of the questions presented. The pictures in this "unisex" test battery are designed so that all items are equally appropriate for males and females.

PAYES is administered orally to small groups in an informal manner. Students mark their answers directly in a test booklet. The measures are scored locally, using scoring directions provided, so that counselors can get quick score results.

Stage of Development: PAYES is based on a series of research and test-development studies, undertaken by Freeberg and his colleagues at Educational Testing Service, resulting in the development and experimental application of the "ETS Test Battery for Disadvantaged Youth," described in Backer (1972).

The original test-development effort, sponsored by the Department of Labor, began with a logical analysis concerning test format. Backer (1972) reviews these test-development procedures. Subsequent research included developing criteria for test validation and a longitudinal validation study. Results from validity studies to date have been modest, but available evidence does suggest that the measures may have some potential for use in guidance work with disadvantaged youth.

At the present time, a revised version of a user's guide for PAYES is being prepared, as is a technical manual that will provide a fairly comprehensive discussion of the rationale for the test constructs and their design. This manual also will summarize results obtained in the validity studies mentioned above. Four of the seven measures (job knowledge, job-holding skills, job-seeking skills, and self-confidence) are currently in use nationwide by the U.S. Department of Labor for program evaluation purposes with longitudinally obtained samples of youth program enrollees. The evaluations include collection of postprogram outcome data and, thus, provide an opportunity to develop larger-scale norms and to look at predictive validities for the four measures. Updated validity information will be fed into subsequent revisions of the technical manual.

Application: In the user's guide for PAYES, it is explicitly stated that the battery should not be used to determine program participation, nor is it to be thought of as a substitute for counseling but rather as a supplement to it. The PAYES guidance battery is seen by its developers as a tool that deals with aspects of basic employment training considered essential in most vocational and work training programs. Further validity data will be needed in order to establish that PAYES can have a significant impact on guidance decisions.

Access: The test battery, administrator's manual, and user's guide are available from Cambridge Book Company, 888 Seventh Ave., New York, NY 10019.

15. *Title of Test: SELF INTERVIEW CHECK LIST (SICL)*

Description: Vocational interest checklist for use in the Cleff Job/Man Matching System

Format: Examinees complete this checklist without supervision, indicating behavioral units of work (conceptualized along the dimensions "things, people, and ideas") they like best and dislike most; then they indicate those they have done most and those they have done least. The checklist is scored to produce two applicant profiles: one describes activities preference, the other activities experience, arranged according to 16 dimensions or work. Results can then be compared with data on the characteristics of the jobs, organized along the same basic dimensions.

Stage of Development: Initial development of the Job/Man Matching System and the SICL are described. Conceptual underpinnings of this system, and its application in a number of settings, are given by Cleff. The latter publication includes details on several validation studies that have

been completed using the Job/Man Matching System. Reliability data also are provided. Information is given on an operational system for the Cleff Job/Man Matching process that includes computer analysis and profiling of results, based both on information gathered about applicants from the SICL and information collected about jobs. Uses of this approach, with a number of adaptations as required for local circumstances and different types of clients, are given for an employment and training agency (Cincinnati), private industry, and an adaptation by PREP, Inc. (See description of COATS.) A separate validation study of the Job/Man Matching System also is described.

Application: The Cleff Job/Man Matching System (CJMS), and the Self Interview Check List (SICL), which is the basic instrument for gathering client data, have received sufficient research attention to be ready for operational use in employment and training settings. The reader is referred to the description of COATS for what is perhaps the best-developed application of this approach.

Access: Available from Dr. Samuel Cleff at the Center for Human Technology, Princeton, NJ.

16. *Title of System: SYSTEM APPROACH TO VOCATIONAL EVALUATION (SAVE)*

Description: Framework for organizing work sample type vocational evaluation of disadvantaged and disabled service recipients.

Format: The SAVE package consists of a compact manual with simple, step-by-step instructions and a supply of forms needed for vocational evaluation with reference to 47 worker trait groups from the *Dictionary of Occupational Titles.*

Included in the package are evaluator instructions, sample figures for easy use of forms, work sample operation sheets and equipment lists, norms and validity information, and DOT reference material. The kit includes suggested requirements for setting up work samples to evaluate each of the DOT areas required for a given assessment effort. The test publisher suggests that most needed materials will appear already in schools, evaluation facilities, or industrial arts classes. Administration of the full system requires about 14½ hours, and adequate training generally is afforded by careful reading of the materials in the SAVE package.

Stage of Development: The SAVE package was developed primarily to provide a relatively easy and inexpensive way to obtain vocational evaluation information organized according to the schemas within the *Dictionary of Occupational Titles.* The SAVE approach is unique in that commercially available work samples can be substituted for many of its components; thus, SAVE can be used as a framework for setting up a vocational evaluation work sample system in a variety of formats. Some limited data on reliability and validity are presented in a related study.

Application: The SAVE approach to vocational evaluation is relatively inexpensive and may have some applicability to employment and training agency settings in terms of planning and organizing a work sample-type assessment system. Evidence available for this report was too sketchy to indicate whether the system can be used as more than a source of ideas and planning tools.

Access: Available from SAVE Enterprises, P.O. Box 5871, Rome, GA 30161.

17. *Title of Pretesting Orientation Material: TEST ORIENTATION PROCEDURE*

Description: Practice materials designed to help applicants learn how to take tests

Format: The Psychological Corporation's multimedia pretesting orientation materials are intended to serve as a preface to any kind of vocational assessment or selection testing. The aim is to reduce anxiety and increase "test wiseness" by offering practice in taking tests. The materials, designed for group administration, guide the group through a half-hour session of easy test-like exercises in a 20-page practice booklet. A tape recording is used to provide directions and explanations. A second 20-page booklet with similar test materials is then provided for further take-home practice prior to the actual testing experience. There are five tests in all—speed and accuracy, spelling, vocabulary, arithmetic, and information. There also is a job application form for the individual to fill out.

Stage of Development: These materials have been well developed and formatted and have been available for some years through the test publisher.

Application: As part of a preassessment procedure, the Test Orientation Procedure might be a useful component of an overall assessment system in an employment and training agency.

Access: Available from the Psychological Corporation, 757 Third Avenue, New York, NY 10017.

18. *Title of Test: TOLERANCE FOR BUREAUCRATIC STRUCTURE SCALE (TBS)*

Description: Questionnaire intended to measure extent to which an individual has a preference for jobs typical of large bureaucratic organizations (i.e., highly structured jobs)

Format: The Tolerance for Bureaucratic Structure Scale was developed as part of a study designed to create conceptual and operational tools for achieving a more accurate match of persons to jobs. The TBS Scale is a self-report questionnaire with 43 items written in simple English. Sample items are, "I would like to have a job where I could set the hours" or "If everybody obeyed the rules at work, there would be fewer accidents." Each item is rated on a four-point scale (strongly disagree—strongly agree).

Stage of Development: In some preliminary validity studies, significant, although modest, correlations were obtained between bank employees' TBS scores and ratings by supervisors. Some further validity data from employment and training applications of the TBS Scale are contained in a test manual available from the instrument publisher. This manual also provides information on test administration and normative and reliability data. General background on the TBS Scale and the concepts underlying it are contained in related studies.

Application: In its present stage of development, the Tolerance for Bureaucratic Structure Scale is probably not ready for operational use in employment and training settings but could serve as a valuable source of ideas or could be used as a counseling tool, especially with respect to job opportunities requiring a person to adjust to a high degree of structure and bureaucratic regulation.

Access: Available from the Center for Policy Research, 475 Riverside Drive, New York, NY 10027.

19. *Title of Test: TSENG RATING SCALES*

Description: Short scales for measuring self-perception, locus of control, and need for achievement

Format: The *Tseng Rating Scales* were developed in three related studies designed to investigate relationships between work-related characteristics of vocational rehabilitation trainees and personality variables. Locus of control was measured in Tseng using the Rotter Internality-Externality Scale; need for achievement was measured in another study by Tseng by the achievement scale of the Edwards Personal Preference Schedule, and self-perception by a rating scale devised by the investigator.

Stage of Development: Each of these studies related scores on the test instrument used to variables such as job proficiency, employability and training satisfaction of rehabilitation clients. Some efforts were made to adjust for low reading levels or lack of test experience by participating research subjects (e.g., via individualized testing sessions), but the researcher acknowledges that these measures have relatively little to recommend them for use with seriously disadvantaged individuals. Correlations between test scores and performance criteria are quite modest.

Application: Both because of limitations in use of these instruments with the severely disadvantaged, and because the results obtained by Tseng are quite modest, these scales probably can serve only as a source of ideas for application in employment and training settings.

Access: Available from M.S. Tseng at West Virginia University, Morgantown, WV 26507

20. *Title of Pretesting Orientation Material: USES PRETESTING ORIENTATION EXERCISES*

Description: Miniature test battery for use in pretesting orientation

Format: The exercises are administered as a series of short tests whose items resemble the first eight parts of the GATB. Administration time requires about one and one-half hours. The exercises offer practice in test taking to individuals who possess minimum literacy skills for taking the GATB but who may have little experience with aptitude tests and may be uneasy about being tested. Their use in pretesting orientation sessions will provide disadvantaged applicants scheduled to take the GATB with experience in group test taking in a nonthreatening atmosphere. The exercises are flexible enough that they can be shortened for individuals who need only a refresher orientation to tests, or they can be presented in full.

Stage of Development: These materials were developed by USES for specific use with the GATB and have been applied in many employment and training settings.

Application: Although most useful for those agencies that administer the GATB as part of their assessment battery, the exercises could be usefully employed as part of a more general pretesting orientation exercise.

Access: Division of Testing, Employment and Training Administration, U.S. Department of Labor, Washington, DC 20213, or through state Employment Service offices

Note: The U.S. Employment Service has two booklets available (in both Spanish and English) for self-orientation—*Doing Your Best on Aptitude Tests* and *Doing Your Best on Reading and Arithmetic Tests.* A "pretesting orientation on the purpose of testing" training course also is available, consisting of an illustrated lecture discussion with pictures and a prepared script.

21. *Title of Test: VOCATIONAL OPINION INDEX (VOI)*

Description: Short paper-and-pencil instrument used to measure job readiness

Format: The VOI consists of 58 items which can be answered in about 20 minutes. It can be administered either in group settings or individually. Anyone who can read English or Spanish at the fifth-grade level should be able to respond meaningfully to all the questions. There are two forms of the VOI available in both English and Spanish. There are also forms which can be used for follow-up once the person has left a training program.

Because of the complex computer scoring required by the VOI, Associates for Research in Behavior, the test publisher, has established a scoring service. Completed VOIs mailed to Associates for Research in Behavior will be scored and a diagnosis report will be mailed back within 10 days. Each respondent's answers are added to the data base so that diagnoses provided use the most up-to-date data available.

Stage of Development: The VOI is the product of a series of research studies conducted by the Associates for Research in Behavior.

The VOI determines an individual's job readiness by assessing three psychological dimensions:

- Attractions to work
- Losses associated with obtaining and maintaining a job
- Barriers to employment

For those individuals who score low on job readiness, the VOI also provides a diagnosis of reasons contributing to the individual's classification as a potential nonworker. This diagnosis can be used to develop a remedial prescription to help an individual develop a more work-relevant posture and attitude.

The VOI was designed, tested, and normed specifically for a disadvantaged population. Norms are based on the responses of over 2,000 males and females from 13 MDTA centers across the country. The normative sample was comparable to the national MDTA population with respect to age, sex, race/culture, and education.

Application: Although the validity data on the VOI are still quite modest, it may have some operational utility in certain employment and training settings.

Access: Available from the Associates for Research in Behavior, Inc., 34th & Market Streets, Philadelphia, PA 19104

22. *Title of Test: WORK RELEVANT ATTITUDES INVENTORY (WRAI)*

Description: Instrument for use in evaluating the effectiveness of employment and training programs

Format: The WRAI grew out of a larger research program concerned with the effectiveness of selected Neighborhood Youth Corps (NYC) programs. The test consists of 26 items arranged into three scales: optimism, self-confidence, and unsocialized attitudes.

Stage of Development: The author reports the use of the WRAI in two longitudinal studies: (a) a study of out-of-school Neighborhood Youth Corps programs in four cities involving 502 subjects and in which the WRAI was administered three times; and (b) a study of the second demonstration of a New Educational Program in five employment and training programs involving 526 subjects. Results indicate that the WRAI was able to differentiate between subjects making a "good" and a "poor" adjustment to work, that the change in WRAI scores while participating in the NYC program was in a positive direction for subjects making a "good" adjustment to work, and negative for subjects making a "poor" adjustment. Further information on reliability and validity is available in Walther. The author feels that the WRAI can be used both as a measure of program effectiveness in manpower service delivery systems and as a help in diagnosing the needs of new program participants.

Application: Sufficient reliability and validity evidence is available to permit consideration of the WRAI for use as a diagnostic tool as well as an assist to counseling.

Access: The report is available from the author, Dr. Regis Walther, at George Washington University, Washington, DC 20052.

(NOTE: The two Backer volumes can be ordered directly from the ERIC Clearinghouse on Tests, Measurements, and Evaluation at the Education Testing Service in Princeton, New Jersey for $4.00 for each volume or $7.00 for both volumes.)

SECTION B

EXPLORING THE RESOURCES FROM THE MATERIALS DEVELOPMENT CENTER OF THE UNIVERSITY OF WISCONSIN-STOUT

Another excellent resource is the Materials Development Center at the University of Wisconsin-Stout, Menomonie, Wisconsin. The following items are drawn from three of the Center's publications. For anyone involved particularly with testing of the physically disabled, the following sources should be explored in depth:

- *Psychological Testing in Vocational Evaluation* by Botterbusch (1978)
- *The Use of Psychological Tests With Individuals Who Are Severely Disabled* by Botterbusch (1976)
- *Client Rating Instruments For Use in Vocational Rehabilitation Agencies* edited by Esser (1975)

The following tests are just a few of the many described in these publications. In addition, achievement batteries, reading tests, character and personality instruments, intelligence tests, and vocational-specific instruments are described.

23. *Title of Test: CRAWFORD SMALL PARTS DEXTERITY TEST*

Description: This individually administered apparatus test takes about 15 minutes to complete. A work table and chair are required.

Format: A board containing 42 holes each on the left and right bottom portions and three bins for pins, collars, and screws across the top portion is used. Part I requires the examinee to use tweezers to pick up one pin and place it in a hole on the board. He or she next uses the tweezers to fit a collar over each pin. After five pins and collars are assembled for practice, the examinee completes 36 pins and collars. In Part II the examinee uses a small screwdriver to screw 30 screws through a plate. Five screws are used for practice. The amount of time required to complete Parts I and II is recorded for each part. The two time scores are compared to the appropriate norm tables.

Stage of Development: Norm Groups—Percentile norms based on the time to completion are available on the following male groups: unselected applicants, appliance factory applicants, two veterans groups, and two high school groups. Female norm groups are assembly job applicants, factory applicants, hourly employees, and employed assemblers. All sample sizes are at least 100 and most are over 175. Samples are inadequately described. Reliability—Split-half reliabilities for Parts I and II are reported as being between .80 and .95. However, since the Spearman-Brown formula was used, these are overestimates. No test-retest correlations are provided—these would have been a more appropriate measure of reliability. Validity—The manual contains summaries of several validation studies using wages and supervisors' ratings as criteria. The test also is related to other dexterity measures.

Application: Because no reading is required, this test may be used with persons who are illiterate. Upper extremity handicaps could prevent the successful use of this test. The Crawford appears most useful in assessing persons for jobs involving the use of small tools and rapid, repeated movements.

Access: The Psychological Corporation, 757 Third Avenue, New York, NY 10017

24. *Title of Test: EDWARDS PERSONNEL PREFERENCE SCHEDULE (EPPS)*

Description: The schedule was designed as an instrument for research and counseling purposes, to provide quick and convenient measures of a number of relatively independent *normal* personality variables. Percentile scores are given for 15 personality variables: achievement, deference, order, exhibition, autonomy, affiliation, intraception, succorance, dominance, abasement, nurturance, change, endurance, heterosexuality, and aggression.

Format: The schedule consists of 255 items each having two short statements. The person selects the statement that best describes him or her. Items have been carefully selected to minimize the influence of social desirability. A separate answer sheet is used. This untimed group or individually administered test takes between 40 and 55 minutes to complete.

Stage of Development: Norm Groups—The EPPS was normed on the following groups: (1) 760 male college students, (2) 749 female college students, (3) 4,031 adult males, and (4) 4,932 adult females. The sample characteristics and sampling plan for these groups are not clearly defined. Reliability—The manual reports split-half and test-retest reliabilities for each scale. Split-half reliabilities range from .60 to .87; test-retest from .74 to .86. Considering the small number of items in each scale, these reliabilities are quite acceptable. Validity—The manual reports little validity data, except for a few correlations with other personality tests. It should be mentioned that the EPPS has been used in a wide variety of research studies and that the author of the EPPS has not revised his manual to include this new material.

Application: The EPPS was developed for college students and adults; therefore, it has a fairly high reading level. The instrument is designed for normal persons and is not appropriate for use with severely disturbed clients. A fair amount of test sophistication is necessary to use the separate answer sheet.

Access: The Psychological Corporation, 757 Third Avenue, New York, NY 10017

25. *Title of Test: GENERAL CLERICAL TEST (GCT)*

Description: A group administered pencil-and-paper test designed to measure aptitudes which are of importance in clerical work of all kinds

Format: There are a total of ten subtests; all are highly speeded. The reviewer estimates total administration time to be from 50 to 55 minutes. The test is published in two formats: a 12-page booklet and two 6-page booklets. The GCT contains ten subtests: (1) checking—comparing names, addresses, and amounts and picking out the differences—19 items; (2) alphabetizing—recording the number of a file drawer for names—61 items; (3) arithmetic computation—20 items; (4) error location—using addition and subtraction to find the error in a matrix—20 items; (5) arithmetic reasoning—reading problems—16 problems; (6) spelling—finding and correctly spelling words—29 items; (7) reading comprehension—answering questions about two paragraphs—14 items; (8) vocabulary—selecting the word that means the same—40 items; and (9) grammar—finding and correcting the error in a sentence—24 items. All scoring is done by hand with a folded answer sheet.

Stage of Development: Norm Groups—Norms are available on female students in high schools and private business schools, for numerous applicant groups, and several groups of persons employed in clerical positions. Most norm groups are of adequate size with most of the norms developed in the late 1960s and early 1970s. The group characteristics are not described as thoroughly as they should be. Reliability—The results of two test-retest studies are given in the manual; the average correlation is in the low .90s. Standard error of measurement results also are given. Both sets of statistics imply that the GCT has adequate reliability for its intended use. Validity—The manual contains two types of validity evidence. First are correlations between test results and school grades and grade point averages. These have yielded significant results. Second are studies in which the GCT was correlated with job success criteria (usually supervisory ratings). The results of these are mixed. The test appears to have some degree of validity.

Application: The purpose of the GCT is to predict employment or training success. The test can be used in a vocational evaluation situation to assess an overall ability for clerical work. Obviously, to successfully take this test, the client needs good visual acuity, use of at least one hand, and an estimated sixth grade reading level. The major use of the GCT would be to provide an overall assessment of the client prior to in-depth assessment for specific clerical jobs.

Access: The Psychological Corporation, 757 Third Avenue, New York, NY 10017

26. *Title of Test: HAND-TOOL DEXTERITY TEST*

Description: The purpose is to "provide a measure of proficiency in using ordinary mechanics' hand-tools. . . . The ability measured by this test is a combination of aptitude and of achievement based on past experience in handling tools." This individually administered apparatus test is untimed; most examinees complete it in between five and 20 minutes. The apparatus frame should be bolted to a sturdy work table 34 inches high. The examinee stands during this test.

Format: Three different sizes (four each) of nuts, bolts, and washers are removed from one side of a hardwood frame with the aid of three wrenches and one screwdriver. The nuts and bolts are then fastened and tightened through the holes on the other side of the frame. The test administrator first reads the instructions and then times the examinee with a stopwatch. One time score in minutes and seconds to completion is obtained and this is compared with norm tables. Comparison with norm tables takes less than one minute.

Stage of Development: Norm Groups—Percentile norms based on the time to completion are given in the manual for the following groups: male job applicants in a southern plant, male adults at a vocational guidance center, airline engine mechanics, apprentice welders in a steel company, electrical maintenance workers, employees and applicants in a manufacturing company, boys at a vocational high school, and high school dropouts in a metropolitan center. The composition of the eight norm groups is not adequately described in the manual. The mean age, job experience, minority group status, and other important descriptive information is not presented. Also the norms for four of the eight groups are based on sample sizes of less than 200 subjects; these should be used with extreme caution. Reliability—The manual reports two test-retest studies which produced reliability coefficients of .91 and .81, considered moderately high for a performance test. Validity—Two types of validity data are presented: (1) correlations with foremen's ratings and (2) correlations with other tests. Foremen's ratings were between .14 and .51; other tests between .11 and .42.

Application: Because no reading ability is required and because the manual permits the administrator "to supplement the directions in any reasonable way to improve the examinee's understanding of the task," literacy and difficulty in understanding instructions should not be problems. The test does require full use of hands and arms and, therefore, may not be appropriate for people with an upper-extremity handicap. The "face" validity of the test may appeal to the disadvantaged and clients with low motivational levels.

Access: The Psychological Corporation, 757 Third Avenue, New York, NY 10017

27. *Title of Test: KUDER OCCUPATIONAL INTEREST SURVEY (KOIS)*

Description: An untimed pencil-and-paper instrument which can be used with high school and college students as well as with adults in employment counseling and retraining.

Format: This instrument is group administered in approximately 30 to 40 minutes. The items are printed on the answer sheet; no separate test booklet is required. The 100 triad items each contain three short statements of different activities. The examinee chooses the one activity in each triad he or she prefers most and the one activity in each triad he or she likes least. The KOIS must be machine scored. Each examinee receives a profile sheet plotting his or her results.

Stage of Development: Norm Groups—Each scale was developed on a separate group of employed workers or students. The scales for all occupational groups were developed on workers employed in these occupations. Students majoring in specific academic areas provided the data for the college major scales. All groups are clearly described in the manual. Reliability—Test-retest reliabilities over a two-week period are reported as .93 and .96. The reliability was also defined in terms of consistency of the differences between scores or each pair of scales. These are at acceptable levels. Validity—The manual presents no evidence that the KOIS can predict future job success based on interest. However, data on classification of presently employed workers according to their interests are presented.

Application: The KOIS provides information that aids in making a vocational choice or selecting a tentative field of study by identifying interests in relation to occupations or occupational fields. Because the KOIS covers a wide variety of occupations, and combines male and female occupational interests, it has a wide variety of uses within the evaluation setting. Persons must be able to read at the sixth grade level to use the KOIS. Because of the size of the print and the lack of contrast between print and paper colors, persons with even mild visual problems may have difficulty reading the items. There are scales for many occupations that do not require college or technical training, thus making the KOIS useful for persons who do not desire additional formal education. However, the college major scales make it most appropriate for high school students and others who are considering formal academic training.

Access: Science Research Associates, Inc., 155 North Wacker Drive, Chicago, IL 60606

28. *Title of Test: SAN FRANCISCO VOCATIONAL COMPETENCY SCALE*

Description: The scale was developed for the purpose of assessing the "vocational competence" of mentally retarded persons participating in sheltered workshop and vocational training programs.

Format: The scale consists of thirty items relating to four areas of vocational competence. These four areas include motor skills, cognition, responsibility, and social-emotional behavior. The items are not organized according to these four areas on the scale, but are said to be positioned according to the sequence in which the behavior would occur during task performance by the individual. Each item is rated according to one of four or five statements or terms. Some items have four statements which apply and others have five. These statements or terms have a numerical value ranging from one for the lowest level of competence to four or five representing the highest degree of competence.

Stage of Development: Items contained in the scale were selected on the basis of factor analysis. The final scale composition is the result of two pretests. The norm group is made up of 562 mentally retarded male and female workshop clients, representing forty-five workshops from all regions of the country. Internal consistency reliability coefficients are reported as .95 for both male and female subjects. A test-retest stability coefficient of .85 resulted from two administrations of the instrument separated by a one-month interval. Vocational competency scores were found to have statistically significant positive correlation with I.Q. scores and school experience. A more detailed discussion of statistical procedures is found in the scale manual.

Application: The authors suggest five more specific uses for the scale, including: selection of mentally retarded individuals for training in semi-independent or sheltered situations, assessment of an individual's status at a particular time, judgment of growth in vocational competence over a period of time, study of the relative efficacy of different training methods, and screening of mentally retarded individuals for placement in independent work situations.

Access: The Psychological Corporation, 757 Third Avenue, New York, NY 10017

29. *Title of Test: SRA MECHANICAL APTITUDES*

Description: This group-administered multiple-choice, pencil-and-paper test can be given in about 40 minutes. It is intended to measure three aspects of mechanical ability. The concept behind the SRA Mechanical Aptitudes is that "no single test consisting of items which measure only one primary component of mechanical aptitude can provide a satisfactory index of the ability to learn mechanical skills."

Format: The test contains three sections: (1) mechanical knowledge—45 pictures of commonly used tools and implements are identified and/or their use is given, (2) space relations—40 figures cut into two or three pieces which are mentally formed into a whole, and (3) shop arithmetic—124 problems, most of which are based on drawings. The manual contains no estimated reading level, but the reviewer estimates that a fifth-grade level is needed. The test is hand-scored using a carbon-centered answer sheet. Raw scores are compared to norms and plotted on a separate profile sheet. Scoring time should be less than three minutes.

Stage of Development: Norm Groups—Separate norms are given by sex and grade for grades 9 through 12. Norms also are given on 650 male trainees. Although all norm groups are of adequate size, the sample characteristics are not described in enough detail to permit an accurate judgment of their relevance. Reliability—Internal consistency estimates using the KR-21 formula are given for the school boys groups on each score. They range from .55 to .83, which are acceptable. Validity—No validity data are contained in the manual.

Application: The test is designed to assess the mechanical ability of persons planning careers or applying for jobs in mechanical areas.

Access: Science Research Associates, Inc., 155 North Wacker Drive, Chicago, IL 60606

30. *Title of Test: WORK BEHAVIOR RATING SCALE*

Description: The scale was designed for use with the mentally retarded. The scale is actually one of four sections used in completing the Trainee Evaluation Report.

Format: The scale is a graphic rating device consisting of thirteen items. The scale items are labeled as follows: co-workers relations, disruptiveness, tolerance for criticism, independence from supervision, cooperation with supervisor, understanding oral instructions, memory for instructions, motivation for work, concentration ability, punctuality, quality of work, quantity of work, and safety awareness and habits. Definitions or cues are provided for each scale item. In addition, points along the continuum for each item also are defined or cued. Letter and numerical values are assigned to points along the item continuum. The numerical values are provided for making finer discriminations of an individual's relative position between points along the continuum.

Stage of Development: A reliability coefficient of .80 for the total scale resulted from the comparison of ratings for two independent raters who evaluated the same group of trainees. Reliabilities for individual scale items varied considerably.

Application: As indicated, the scale is intended for use with the mentally retarded.

Access: Exceptional Children's Foundation, 2225 West Adams Boulevard, Los Angeles, CA 90018

31. *Title of Test: WORK ENVIRONMENT PREFERENCE SCHEDULE (WEPS)*

Description: The WEPS is a self-administering pencil-and-paper test designed to measure a personality construct, 'bureaucratic orientation,' which reflects a commitment to the set of attitudes, values, and behaviors that are characteristically fostered and rewarded by bureaucratic organizations. The title of the test is somewhat misleading—the WEPS measures only the personality construct of accepting work in a bureaucracy.

Format: Although not specifically stated in the manual, the test can be administered to individuals or groups in a maximum time of 10 minutes (the WEPS is untimed). The 24 items consist of statements which the examinee responds to by use of a five-choice Likert Scale (strongly agree, agree, undecided, disagree, and strongly disagree). The WEPS is scored by hand and no stencil is needed. The test administrator sample totals the weights assigned to each alternative and records its raw score number. A percentile score is given; there are several norm groups.

Stage of Development: Norm Groups—The WEPS has norms on a variety of student and worker groups of both sexes, some of these are: male and female high school and college students, Army ROTC, foremen, salesmen, mental hospital employees, and three types of public school administrators. The sample sizes appear adequate, but the samples are not described in enough detail for

the reviewer to judge their representativeness. Reliability—Two types of reliability data are reported in the manual: (1) internal consistency measures on four groups are .83, .84, .89, and .91 and (2) test-retest reliability studies review a correlation of .82 for a short time period and .65 after 16 months. For an instrument with only 24 items, these coefficients are acceptable. Validity—The manual presents considerable validity data in the form of correlations with scales on other personality tests as well as attitude scales on authoritarianism, dogmatism, etc. Validity data based on peer ratings, performance ratings, and other criteria are given. Taken as a whole, the data presents the WEPS as being a valid instrument.

Application: Because the sentence structure is fairly complex and the vocabulary level of the items is high, the user will have to read at about the tenth-grade level. The instrument could be used for clients who are considering jobs in organizations having a bureaucratic outlook. It could also be used as a vocationally oriented measure of a person's attitudes toward authority.

Access: The Psychological Corporation, 757 Third Avenue, New York, NY 10017

SECTION C
EXPLORING SUPPLEMENTARY DATA

This section reviews a number of additional paper-and-pencil tests—and assorted instruments—that could serve as testing resources. Some, such as the Job Career Skills Assessment Program, are fairly new. The majority may be suitable for use with diverse groups—both disadvantaged and non-disadvantaged. This listing was compiled by staff at the National Center for Research in Vocational Education. The reader is reminded, however, that many more resources are available, particularly in the two volumes edited by Buros: *Tests in Print II* and *The Eighth Mental Measurements Yearbook*.

32. *Title of Test: ADULT PERFORMANCE LEVEL PROGRAM: ADULT AND HIGH SCHOOL SURVEYS*

Description: The adult survey is designed to diagnose and evaluate competencies necessary for adult living; focuses on those skills critical for functioning in society in the content areas of community resources, occupational knowledge, consumer economics, health, and government law. The high school survey is designed to diagnose and evaluate coping skills and knowledge necessary to functional competency; it also focuses on application of basic skills in the content areas listed above.

Format: The APL (adult survey) is a curriculum-related assessment program that encompasses the five general content areas noted above. At the same time, the test, a 40-item instrument, focuses on five specific skills: identification of facts and terms, reading, writing, computation, and problem solving. Each skill is tested within each content area. The reading level of the survey items is between fifth and sixth grade as measured by the Dale-Chall readability analysis. The test takes approximately 1½ hours to administer.

The format for the high school survey, also 40 items, is multiple choice. Each item measures a basic skill applied to a practical task in one to five content areas. The high school form is at the fourth and fifth grade reading levels. The test is not timed but takes approximately one hour to administer. No special training is needed to administer it. The test is either hand-scored or machine-scored.

Stage of Development: Versions of each survey form were administered to representative populations in 1976. Therefore, it is the only available test of functional competency that has been administered to adults and high school students throughout the country. Both reliability and validity data are cited in the test manuals.

Application: The publisher indicated that the test can be used "as a screen for student proficiencies and deficiencies" and to certify that students have acquired basic functional skills before graduation.

Access: The ACT Program (APL Department), P.O. Box 168, Iowa City, IA 52240

33. *Title of Test: APTITUDE TESTS FOR OCCUPATIONS*

Description: The tests are designed to aid in vocational counseling through the assessment of occupationally related aptitudes and potentialities.

Format: The battery includes tests for: personal-social aptitude, mechanical aptitude, general sales aptitude, clerical routine aptitude, computational aptitude, and scientific aptitude.

Stage of Development: Reliability and validity data are provided in the manual.

Application: This battery might be given in conjunction with a standardized interest inventory. This will provide a counselor with a source of information concerning both interests and aptitudes.

Access: CTB/McGraw Hill, Del Monte Research Park, Monterey, CA 93940

34. *Title of Test: BENNETT MECHANICAL COMPREHENSION TEST*

Description: This sensory-mechanical test measures the ability to perceive and understand the relationship of physical forces and mechanical elements.

Format: The test consists of two forms, S and T; each consists of 68 items. Each item includes a picture exhibiting one or more objects, physical situations, or mechanical relationships about which a question is asked. The principles underlying these questions include leverage, force and motion, light, heat, and sound. The examples used are ones arising out of people's common experiences rather than from technical training.

The forms are suitable for male and female applicants for industrial and mechanical jobs, and for high school students, for people already employed in mechanical jobs, for candidates for engineering schools, and for other adult groups of comparable ability and education. Each form is printed in a reusable booklet. The answers are marked on a separate answer sheet. Forms S and T are timed tests with a 30-minute limit. The score is based on the number of right answers with no penalty for incorrect responses. Both tests are hand-scored, using special scoring keys.

Stage of Development: Norms are available for both men and women. A Spanish edition is available. There is no mention of Blacks or disadvantaged.

Application: The test is for use by counselors, in conjunction with other assessment tools. The tests may be most useful when used with clerical aptitude and manual dexterity tests to predict current performance in selected mechanically oriented occupations.

Access: The Psychological Corporation, 757 Third Avenue, New York, NY 10017

35. *Title of Test: CALIFORNIA OCCUPATIONAL PREFERENCE SURVEY (COPS)*

Description: An interest inventory that provides job activity/interest scores relating to occupational clusters. Each cluster is keyed to a curriculum choice and a major source of job information including the *Dictionary of Occupational Titles* and the *Occupational Outlook Handbook*. It is appropriate for grade 8 through adult and comes in a Spanish language edition.

Format: The inventory consists of 168 items describing activities performed in a variety of occupations. Test takers respond on a four-point scale indicating how much they like each activity. Fourteen occupational cluster scores are obtained, including: science—professional; science—skilled; technical—professional; technical—skilled; outdoor; business—professional; business—skilled; clerical; linguistics—professional; linguistics—skilled; aesthetic—professional; service—professional; service—skilled. COPS comes in a single, self-contained booklet and takes about twenty minutes to administer. It can be self-scored in about that same time; hence, there is immediate feedback. It is written at a sixth grade reading level. There are two other related instruments: the Career Ability Placement survey of abilities, which includes tests of mechanical reasoning, spatial relations, verbal reasoning, numerical ability, language usage, work knowledge, perceptual speed and accuracy, and manual speed and dexterity; and the Career Orientation Placement instrument relating to such things as work values, leadership abilities, and orderliness.

Stage of Development: The instrument was developed from research into the structure of occupations. The research was based on the classification of occupations into major groups and levels with the groups. National norming is provided to compare the responses against a single norm sample; the data is for grades 7 through 12. The information on validity is weak and somewhat vague.

Application: The instrument can be used by a counselor with the vocationally as well as the college oriented. The results show the student's relative standing in each occupational cluster as compared with other students. Scores can be used in business and industrial settings for employee self-awareness.

Access: Educational and Industrial Testing Service, P.O. Box 7234, San Diego, CA 92107

36. *Title of Test: CAREER SKILLS ASSESSMENT PROGRAM (CSAP)*

Description: The *Career Skills Assessment Program* consists of six separate self-assessment areas:

- Self-Evaluation and Development Skills
- Career Awareness Skills
- Career Decision-Making Skills
- Employment-Seeking Skills
- Work Effectiveness Skills
- Personal Economics Skills

The measures are designed to assess instructionally relevant clusters of skills and may be used alone or sequentially.

Format: Materials for each area include:

- Exercise Booklet – Contains 60 multiple-choice questions; reusable.
- Response Sheet – Three-ply form permits students to self-score with immediate feedback and enables teachers to measure class performance without a time lag. One copy may be sent for batch machine scoring to generate summary reports of group performance for use in planning or evaluation.
- Self-Instructional Guide – A self-guidance unit organized around each of the six target skill clusters. A personal resource for the individual, with a section providing an explana-

tion of the rationale for the preferred response to each question.

- Supporting materials include detailed directions for administering the measures, a handbook for administrators, counselors, and teachers, and a sound filmstrip kit for staff and student orientation.

Stage of Development: CSAP measures will not be standardized on a national population, because a national reference group is of limited value in interpreting performance in the area of career development. The most valuable and appropriate reference group for understanding an individual's career development is the group she or he most resembles educationally and demographically. The reporting procedure, therefore, makes provision for the production of local norm data.

Application: The design of the program is such that it can be adapted to a variety of situations—as homework assignments, as learning units in seminars, to complement activities in academic and vocational classes. Counselors will find the materials effective in both individual and group guidance sessions, and teachers can work with the materials in the classroom. The measures also are appropriate for many adult education groups as well as Work Incentive programs and Comprehensive Employment and Training Act programs.

Access: Career Skills Assessment Program of the College Board, P.O. Box 2839, Princeton, NJ 08541

37. *Title of Test: DAILEY VOCATIONAL TESTS*

Description: These tests are designed to assess potential—aptitude and achievement—for training and success in a number of occupations within the trade, technical, and business-secretarial fields. It is designed to be used basically with persons who plan to enter occupations at the skilled level in these areas.

Format: The two items can be used separately or as a battery. They are the Technical/Scholastic Test and the Business English Test. The Technical/Scholastic Test contains 150 multiple-choice items for measuring both current knowledge and potential in electrical, mechanical, and scholastic areas. It contains three scales including: (1) clerical scale, (2) mechanical scale, and (3) scholastic scale. The Business English Test consists of 111 items testing spelling, punctuation, capitalization, and grammar. The tests are appropriate for grade 10 through adults. The Technical and Scholastic Test takes 65 minutes and the Business English Test takes 30 minutes. The tests are both hand-scored and machine-scored.

Stage of Development: The publisher indicates that norms have been developed to be used for guiding students in academic and vocational choices at the junior and senior high school levels; for screening students in trade, technical, and business schools; and for selecting personnel for certain jobs in business and industry.

Application: The test is most applicable in business and industry and in specialty-oriented vocational schools.

Access: Riverside Publishing Company, 8420 Bryn Mawr Avenue, Chicago, IL 60631

38. *Title of Test: DIFFERENTIAL APTITUDE TESTS (DAT)*

Description: This DAT is an integrated battery of aptitude tests designed for educational and vocational guidance. Based on the research finding that "intelligence" is not a single ability but rather a number of abilities possessed in varying amounts by each individual, the battery yields nine reliable scores including an index of scholastic ability. These form a basis for helping individuals develop educational and vocational plans.

Format: The DAT provides a profile of the relative strengths and weaknesses of each student in eight abilities: (1) verbal reasoning, (2) numerical ability, (3) abstract reasoning, (4) space relations, (5) mechanical reasoning, (6) clerical speed and accuracy, (7) spelling, and (8) language usage. A ninth score, an index of scholastic ability obtained by summing the verbal reasoning and numerical ability scores, serves essentially the same purpose as scores derived from standard intelligence tests. The testing populations range from grades 8 to 12, college-age persons, and adults. The total battery of eight tests takes three hours to administer. Administration should be by a counselor. The test is hand-scored or machine-scored.

Stage of Development: Validity scores present correlations of DAT scores with course grades in a variety of areas and with scores on a variety of achievement tests. Correlations with other standardized aptitude tests (e.g., the GATB), achievement measures, and interest measures are reported. Normative data, however, are not given regarding the relative representation of various ethnic or socioeconomic groups. Norms for males and females are available.

Application: The primary use has been in counseling individuals. The specific aptitudes with which it deals are verbal reasoning, numerical ability, abstract reasoning, and clerical speed and accuracy.

Access: The Psychological Corporation, 757 Third Avenue, New York, NY 10017

39. *Title of Test: FLANAGAN APTITUDE CLASSIFICATION TESTS*

Description: The tests are a comprehensive aptitude test battery of 16 separate aptitude tests which enables the tester to combine scores on the skill tests to measure potential for success in specific careers.

Format: The subtests include: (1) inspection, (2) coding, (3) memory, (4) precision, (5) assembly, (6) scales, (7) coordination, (8) judgment and comprehension, (9) arithmetic, (10) patterns, (11) components, (12) tables, (13) mechanics, (14) expression, (15) reasoning, and (16) ingenuity. The aptitude battery has the advantage of relating aptitude patterns to vocational areas. However, considerable skill and practice are needed to administer the tests. The time for the tests varies from 5 to 40 minutes. A highly trained administrator is needed due to the length and relative difficulty of administration.

Stage of Development: Test literature indicates that the greatest weakness in the battery is its lack of validity data to support many of the claims made in the manual and in accompanying materials. The test literature further indicates that until more validity data are available, it would probably be best to be extremely cautious in interpreting the meaning of the scores. Validity coefficients for occupational standards with criteria of progress and performance in business and clerical fields were low for secretary, typist, steno and sales clerks.

Application: The tests have been designed for vocational counseling and as a guide for planning a suitable program of school courses.

Access: Science Research Associates, Inc., 155 North Wacker Drive, Chicago, IL 60606

40. *Title of Test: HALL OCCUPATIONAL ORIENTATION INVENTORY*

Description: The inventory provides a systematic framework designed to enable the individual to explore the factors involved in occupational choice in terms of the relationship between psychological needs and value fulfillment, worker traits, and job content characteristics.

Format: The scales of the inventory are as follows: (1) creativity–independence, (2) risk, (3) knowledge–information, (4) belongingness, (5) security, (6) aspiration, (7) esteem, (8) self-actualization, (9) personal satisfaction, (10) routine–dependence, (11) data orientation, (12) things orientation, (13) people orientation, (14) location concern, (15) aptitude concern, (16) monetary concern, (17) physical abilities concern, (18) environment concern, (19) coworker concern, (20) qualifications concern, (21) time concern, and (22) defensiveness.

Controlled vocabulary and readability levels make it appropriate to use with reading handicapped adults. The inventory is untimed, but takes approximately 30 to 40 minutes. Machine scoring is available. The answer format is free choice, allowing every item to be answered through a five-point scale ranging from "essential" to "intolerable."

Stage of Development: Validity data are given for items and for scales, mainly in the form of discrimination between different age, educational, or sex groups. The scales that significantly differentiate between a number of occupational samples, with numbers varying between 40 and 125, are presented. However, the norming information is vague and skimpy; no norms are presented for women.

Application: The inventory attempts to assess the relative importance to the person of a number of factors or attributes of work. The focus is on occupation behaviors rather than specific occupations.

Access: Scholastic Testing Service, Inc., 480 Meyer Road, Bensenville, IL 60106

41. *Title of Test: HARRINGTON/O'SHEA SYSTEM FOR CAREER DECISION-MAKING (CDM)*

Description: This instrument provides a framework for self-analysis of six areas critical to career decision-making: occupational choices, school subjects, future education or training plans, job values clarification, abilities, and interests.

Format: The CDM helps individuals to establish career awareness, make career decisions, and acquire information about the kinds of jobs they might enjoy. It consists of three systems depending on whether it is self-scored or computer-scored, computer or individually interpreted, or a combination of the two. A survey booklet and interpretive form are provided for each of the three systems. All three evaluate the six critical career decision-making areas noted. The CDM can be group or self-administered. Small group administration (i.e., in a classroom) is preferable to mass administration. Since it is not a test, individuals may communicate while completing it. The administration time is 30 to 40 minutes.

Stage of Development: Reliability studies were reported for Self-Scoring System S. Based on retest and internal-consistency procedures, the reliability was .88 for males and .89 for females. The normative group consisted of 2,256 males and 2,753 females. Whites, Blacks, Spanish Americans, and American Indians were represented in the group.

Application: The CDM assesses educational deficits and achievements in terms of career awareness and decision making. Curriculum could then be developed and the need for career counseling assessed.

Access: Distributed by Chronicle Guidance Publications, Moravia, NY 13118

42. *Title of Test: INDUSTRIAL READING TEST (IRT)*

Description: A fairly new test of reading ability designed as a screening device with applicants or trainees for technical or vocational training programs.

Format: The IRT represents an alternative approach to the measurement of reading skills. It is specifically constructed so that the students, trainees, or applicants for whom the test is intended will find the material directly relevant and meaningful. Some of the reading passages are representative of sections encountered in technical manuals; others are written in the form of a company memorandum. Good performance on the test is not dependent on previous knowledge of the subject. The test is appropriate for grades 9 to 12 and adults. Hand-score answer keys and machine scoring are available through the publisher. Two forms are available. Form A is restricted to use by industry; Form B may be used by both schools and industry. The test takes 40 minutes.

Stage of Development: Normative data, reliability, and criterion-referenced validity have been established on the following groups: apprentices, technical trainees, vocational high school students, and adult students in vocational training programs.

Application: Test results attempt to show whether or not an individual has the necessary reading ability to make satisfactory progress in technical training. Vocational schools may use the test to help students select an appropriate program. Schools and companies that provide remedial reading instruction may use it to identify students, workers, or trainees who would benefit from such instruction.

Access: The Psychological Corporation, 757 Third Avenue, New York, NY 10017

43. *Title of Test: JOB ANALYSIS AND INTEREST MEASUREMENT (JAIM)*

Description: This self-description inventory measures coping skills important to performance and satisfaction in work roles. It is designed to measure factors such as "getting along" (coping) by determining the degree of match between requirements and potentials of jobs and the individuals self-reported behavior styles, activity preference, and values.

Format: JAIM provides scores for 32 specific scales; for example, self-confidence, orderliness, perseverance, assertiveness, dependability, emotional control, and the like. It does not have to be administered under test conditions; in fact, one can complete it at home and return it by mail. There is no time limit, but it takes approximately 30 to 40 minutes for the average white-collar worker to complete. There is no hand scoring; it is scored through a computer program.

Stage of Development: The instrument was developed by studying the job and the individual in relationship to each other. Jobs were studied by analyzing behavior requirements and satisfactions and value potentials of the job and then making inferences as to personal characteristics of the workers who were associated with job performance and satisfaction. Some preliminary reliability and validity data are provided.

Application: Potential uses include individual counseling (comparing oneself to scores of a norm group and scores of a wide range of occupations and professions), estimating job requirements and satisfaction potential of particular jobs or roles, and assessing personnel decisions.

Access: JAIM Research, Inc., 1808 Collingwood Road, Alexandria, VA 22308

44. *Title of Test: JOB INTEREST AND LITERACY LEVEL EVALUATION INSTRUMENT (JILL)*

Description: JILL is a self-administered checklist which elicits perceptions of what the client wants to do, how he or she wants to do it, and how well the client thinks he or she can perform. The extent to which the client thinks he can perform is the measure of "aptitude." The checklists for interest and aptitude, therefore, are subjective measures. The instrument is in two parts. The second part is a survey of basic skills, i.e., a simple test of literacy.

Format: The JILL can be self-administered or filled in by the counselor. It can be done in groups or individually. A counselor can read the instrument to the client and record answers in about a half hour or less. A person with eighth grade reading skills can complete the two parts on his or her own in 15-30 minutes. There are five main questions in relation to job interest and aptitude. The first deals with desired physical aspects of potential jobs. The second and third questions deal with nonphysical job aspects and again are forced choice situations. In question 4, the client is asked what general kind of work he or she would like to do. In question 5, the client indicates his or her "aptitude" by considering to what extent, or how well, he or she can do the specific duties.

There are nine questions in the literacy level or basic skills survey. The first three correspond to sixth-grade level skills, the next three to eighth-grade level skills, and the last three to twelfth-grade level skills. Questions 1, 4 and 7 involve the use of reading skills. Questions 2, 5, and 8 involve the use of writing skills. Questions 3, 6 and 9 are computation items. The test ranges from easy to difficult. There is always the option of "I don't know." and clients are encouraged to check this response rather than guess.

Stage of Development: The JILL was put together for use by CETA counselors in Texas. The instrument, which is owned by the University of Texas at Austin, is in an experimental stage. As such, it is for use with CETA clients only. Initially, permission to use the test will be reserved to those operators who will agree to provide the kind of feedback information necessary for revision and validation. The intent is not arbitrary; rather it is based on the determination to provide an instrument that offers the highest possible level of validity and reliability.

Application: The JILL was developed for use in initial interview sessions. Based upon comments of CETA counselors, it was felt that if any testing at all was to occur, the most important information that could be of use to a counselor was data that could aid in placing an individual appropriately. The rationale was that if a person could be put in a situation that best fits him or her, then that person would be more likely to achieve, and some problems with client motivation could be avoided. The instrument, therefore, is a tool that enables the counselor to be of greater

service to the individual than he or she would be otherwise. It is a way of recording data that, along with other information known about the client, aids the counselor in his or her important decision-making processes.

Access: Adult Performance Level Project, The University of Texas at Austin, College of Education, Austin, TX 78712

45. *Title of Test: KNOWLEDGE OF OCCUPATIONS TEST*

Description: The test has been constructed to measure the extent to which high school students have knowledge of occupations.

Format: For the purpose of constructing this test, knowledge of occupations has been defined as information possessed by an individual regarding job descriptions, training, certification and licensing, trends, tools, terminology, earnings, and the ability to interpret occupational material. The test consists of 96 questions grouped into the eight categories noted above. The test has a forty-minute time limit and is either hand- or machine-scored.

Stage of Development: The items were constructed after a detailed analysis of literature in the vocational field and of various career materials used in high schools. Since the test was initially developed in 1974, parts of it may be outdated. The manual contains limited information on norm groups, validity, and reliability.

Application: The primary function of the test is to provide information for the counselor and student. A high score on the test does not guarantee success in an occupation, nor does a low score guarantee failure. However, the counselor should make certain that students scoring low have accurate information on which they are basing their career and vocational plans.

Access: Psychologists and Educators, Inc., Jacksonville, IL 62650

46. *Title of Test: MINNESOTA IMPORTANCE QUESTIONNAIRE (MIQ)*

Description: The MIQ is a paper-and-pencil inventory of vocational needs: preferences for occupational reinforcers.

Format: The questionnaire is designed to measure the following 20 vocationally relevant need dimensions: Ability Utilization, Achievement, Activity, Advancement, Authority, Company Policies and Practices, Compensation, Coworkers, Creativity, Independence, Moral Values, Recognition, Responsibility, Security, Social Service, Social Status, Supervision–Human Relations, Supervision–Technical, Variety, and Working Conditions.

Two forms of the MIQ are available. The *Paired Form* presents pairs of vocational need statements; the individual indicates the more important need in each pair. The *Ranked Form* presents vocational need statements in groups of five, and the individual ranks the five needs in each group according to their importance. The vocational-need profiles obtained from the Paired and Ranked Forms are highly similar.

The MIQ can be administered to groups or to individuals. Most people complete the Paired Form in 30 to 40 minutes. The Ranked Form usually requires 15 to 25 minutes to complete. Instructions for the self-administration of the MIQ are given in the booklet. The

MIQ booklet and answer sheet are designed for individuals who can read at the fifth-grade level or higher. Spanish and French language editions of the MIQ are available.

Stage of Development: Technical information on the development of the MIQ, reliability and validity information, normative data, and interpretations of sample profiles are provided in a manual.

Application: A related document, the *Counseling Use of the Minnesota Importance Questionnaire,* is a manual describing the use of the MIQ as a counseling tool. It contains information essential for the counseling interpretation of MIQ profiles and examples of its actuarial and clinical applications.

Access: Vocational Psychology Research, Department of Psychology, N620 Elliott Hall, University of Minnesota, 75 E. River Road, Minneapolis, MN 55455

47. *Title of Test: MINNESOTA VOCATIONAL INTEREST INVENTORY*

Description: This interest inventory is designed to measure interests in nonprofessional occupations for men and boys over 15 years of age who are not planning to attend college.

Format: The inventory consists of 158 triads of statements describing work activities. The test taker indicates the one activity most liked and the one activity least liked. Scores are obtained for 21 occupational scales and nine area scales. The area scales are: (1) mechanical, (2) health service, (3) office work, (4) electronics, (5) food service, (6) carpentry, (7) sales-office, (8) clean hands, and (9) outdoors. The inventory is untimed and takes approximately 45 minutes to administer. A trained counselor should administer it.

Stage of Development: Originally it was developed to appraise the interests of Navy enlisted men and to assist in their placement. It is not designed for women. The manual warns that interests do not imply ability and could cause misuse of results.

Application: The inventory is primarily for use with students interested in skill trades curricula.

Access: The Psychological Corporation, 757 Third Avenue, New York, NY 10017

48. *Title of Test: OHIO VOCATIONAL INTEREST SURVEY (OVIS)*

Description: An interest survey designed to assist students with their educational and vocational planning.

Format: The Interest Inventory, comprising 280 work activity items, yields a profile of the student's interests along 24 scales representing all occupations in the 1965 edition of the *Dictionary of Occupational Titles.* The Student Information Questionnaire gathers background information about the student's occupational plans, school subject preferences, curriculum plans, post-high school plans, and vocational course interests. Also included in the questionnaire is a local survey section which enables users to ask up to eight additional questions of local interest. It is appropriate for use in grades 8 to 13.

Available for use with OVIS are the *Guide to Career Exploration* and the *Career Exploration Leaflet.* The guide contains detailed descriptions of the 24 job clusters represented by the OVIS scales and a special information section for guidance counselors. The leaflet is a four-page worksheet designed for use with the guide to help students identify and record information relevant to their educational and vocational decision making. No hand-scoring keys for OVIS are provided since hand-scoring would require scoring each document 24 times. The Psychological Corporation's Scoring Service processes the answer documents.

Stage of Development: Percentile ranks and stanines corresponding to the 24 scale scores, by grade and sex, are available.

Application: For use in counseling and career planning.

Access: The Psychological Corporation, 757 Third Avenue, New York, NY 10017

49. *Title of Test: RATING SCALES FOR VOCATIONAL VALUES, INTERESTS, AND APTITUDES (VIA)*

Description: These rating scales attempt to integrate a student's self-assessment of vocational values, interests, and aptitudes for several occupational areas, to determine the extent of interest in 20 areas applicable to career planning, to ascertain the degree of aptitude a person believes he or she possesses in each, and to discover the amount of value a person places on each of these classifications.

Format: There are three rating scales; each is presented on a separate sheet with instructions printed on the scale itself. Each scale consists of the same 60 activity items to which an individual responds, using a seven alternative response format. These alternatives, corresponding to the appropriate scale, are described on the front of each rating scale sheet. Answers are marked directly on a disposable sheet.

Stage of Development: Norms are based on responses of high school and college students. Percentile conversion tables based on the responses of 645 individuals are presented separately for males and females.

Application: The scales provide the means for effecting an integration of vocational values, interests, and aptitudes to produce data which may be applied against the requirements of occupations as the individual progresses toward achieving that degree of compatibility between oneself and the world of work which establishes bases for involvement in a wise career plan.

Access: Education and Industrial Testing Service, Box 7234, San Diego, CA 92107

50. *Title of Test: SELF-DIRECTED SEARCH (SDS) – 2 Forms Regular Form E*

Description: The SDS is a self-administered and self-scored counseling aid based on Holland's theory of vocational choice. Separate sections determine a person's resemblance to each of six occupational or personality types: realistic, investigative, artistic, social, enterprising, and conventional. Form E is appropriate for adults with limited reading skills.

Format: The SDS consists of 228 items including items related to preferred activities, competencies, occupations, and self-estimates. The scores of the SDS are in three letter codes related to Holland's six personality types. An occupational finder is available to look up grades. The SDS is suitable for persons aged fifteen and older. The upper and lower limits have not been well investigated. Thirteen- and fourteen-year-olds have taken the SDS successfully when it is administered in groups of three to five. People with high school education usually have little difficulty. Most people complete the SDS in 40 to 60 minutes.

Stage of Development: In terms of reliability, the corrected split-half reliability coefficients for the summary scales range from .83 to .93. In short, the 38-item summary scales formed by adding all R-items, all I-items, and so on, have a high degree of internal consistency. In terms of validity, a new scoring procedure for the SDS has the same predictive validity as the old; the shift to a simple additive scoring scheme has not affected the predictive validity or the codes obtained from the SDS.

Application: The SDS can be of use to the rehabilitation counselor with a large caseload. Use of the instrument could stimulate vocational choice exploration and possibly reduce the time required in face-to-face contact with the client.

Access: Consulting Psychologists Press Inc., 577 College Avenue, Palo Alto, CA 94306

51. *Title of Test: THE STRONG-CAMPBELL INTEREST INVENTORY (SCII)*

Description: This interest inventory gives persons information about themselves and what will help them make decisions about their life plans; it provides information to counselors and other professionals and helps in studying groups of persons.

Format: This revision and extension of the Strong Vocational Interest Blank merges the men's and women's forms. The Inventory is in seven parts: Occupations, School Subjects, Activities, Amusements, Types of People, Preference Between Two Activities, and Your Characteristics. It yields scores on six General Occupational Themes, 23 Basic Interest Scales, and 162 Occupational Scales.

The average time for completion of the inventory is 30 minutes; the reading level is about sixth grade. The SCII has been found to be most beneficial for persons over seventeen years of age. Scoring is too complex to be completed by hand; a scoring service must be used. Profiles that relate the General Occupational Themes to the Basic Interest and Occupational Scales are the usual output. However, some scoring services provide interpretive profiles printed individually by computer.

Stage of Development: Two-week and 30-day test-retest correlations are presented for each set of scales. Median correlations, even for the shorter General Occupational Themes and Basic Interest Scales, are above .86 for the 30-day interval and above .90 for the two-week interval. The General Occupational Themes and Basic Interest Scales have content validity due to the item selection procedure. Each type of scale presented has concurrent validity, i.e., persons in specific occupations score high on appropriate scales.

Application: The SCII permits the counselor to discuss broad themes besides specific occupations that may be more appropriate for rehabilitation clients.

Access: Stanford University Press, Stanford, CA 94305

52. *Title of Test: TEST OF ADULT BASIC EDUCATION (TABE)*

Description: TABE is an achievement battery (reading, mathematics, and language) intended for adults at grade 2 to 9 reading levels.

Format: The test is intended to establish the level of instruction for adults should begin and to identify instructional needs in the basic skills. Subtests are: Reading (Vocabulary, Comprehension), Mathematics (Computation, Concepts, Problems), and Language (Capitalization, Punctuation, Expression, Spelling).

The three levels of TABE allow selection of appropriate tests for students who function at different levels of proficiency in the skill areas. The levels are E (easy), M (medium), and D (difficult). The working time for each test section represents the time that elapses from the beginning to the completion of the tests (Level D—176 minutes; Level E—94 minutes; and Level M—158 minutes). Adherence to exact time limits is important.

Two types of answer sheets are available: the complete battery answer sheet with all test sections on a simple form, and the SCOREZ answer sheet with separate forms for the reading, mathematics, and language skills areas.

Stage of Development: Norms are based on 1963 standardization of the 1957 California Achievement Test. No adult norms are available and minorities are not mentioned in standardization.

Application: The results from the battery can be used to place students in appropriate learning groups and to select educational materials for students to use in overcoming deficiencies revealed by analysis of their test performance.

Access: CTB/McGraw Hill, Del Monte Research Park, Monterey, CA 93940 (main office)

53. *Title of Test: VOCATIONAL INTEREST, EXPERIENCE, AND SKILL ASSESSMENT (VIESA)*

Description: This inventory (VIESA) covers three areas: interests, experiences, and skills. "Data, Ideas, People and Things" dimensions are used to integrate information about "Self and the World of Work."

Format: The inventory focuses on students in grades 8 to 12. It is easily taken and self-scored in 45 minutes. VIESA enables students to relate themselves, through a World of Work map, to six job clusters and 25 job families spanning the entire world of work. The job clusters are compatible with the typology in Holland's theory of careers. Job family charts cover 650 occupations employing more than 95 percent of the U.S. labor force.

VIESA consists of a Career Log and Guidebook for students and a 48-page user's handbook for teachers. The log and guidebook contain aids to students for taking and scoring the inventories. The handbook presents suggestions for school use of VIESA, transparency masters, discussion guides and other aids to facilitate group introduction, discussion of results, and follow through. VIESA also is compatible with the ACT Career Planning Program which also contains an ability test battery.

Stage of Development: VIESA has been nationally normed. Reliability and validity data are summarized in the user's handbook.

Application: The program is intended for use by counselors, teachers, or supervised paraprofessionals and is intended to help students expand self-awareness, develop career awareness, and identify personally relevant career options.

Access: Test Department, Riverside Publishing Co., 8420 Bryn Mawr Avenue, Chicago, IL 60631

54. *Title of Test: VOCATIONAL PLANNING INVENTORY*

Description: This is a comprehensive testing program ndividual predictions of success in the major vocational curriculum areas easuring an individual's general ability, specific aptitudes, achieveme also transforms the resulting test score data into estimates of the average would most probably receive in courses in specific vocational curriculum are ocational and academic subjects as a whole.

NO LONGER AVAILABLE

Format: The battery consists o ithmetic Index, the SRA Pictorial Reasoning Index, the SRA Verbal Form, the y of Interpersonal Values, and various subtests of the Flanagan Aptitude Classification Test and Flanagan Industrial Tests. It is appropriate for grades 8 to 13. The time for administration varies between two hours and 25 minutes and two hours and 50 minutes.

Stage of Development: No information was available on intercorrelations.

Application: The programs are not to tell what area a person should enter. They are intended only to tell something about how good one's "grades" are likely to be in each of several curriculum areas.

Access: Science Research Associates, Inc., 155 North Wacker Drive, Chicago, IL 60606

55. *Title of Test: WIDE RANGE ACHIEVEMENT TEST (WRAT)*

Description: The Wide Range Achievement Test (WRAT) is a tool for the study of progress in coding aspects of basic school subjects. It studies the sensory-motor skills involved in learning. It does not duplicate other tests of comprehension, judgment, reasoning, and generalization.

Format: The test has three subtests: (1) reading (recognizing and naming letters, pronouncing words), (2) spelling (copying marks resembling letters, writing names, printing or writing words to dictation), and (3) arithmetic (counting, reading number symbols, oral and written computation). Each subtest is divided into two levels: Level I (ages 5-11), and Level II (ages 12-adult). Different sections of the WRAT have varying administering instructions. Some sections must be given on a one-to-one basis (i.e., reading aloud). Other sections can be administered to small groups of up to five individuals (i.e., prespelling section). Some sections can be administered to large groups (i.e., arithmetic computation). Due to the nature of the different material tested on the WRAT, some sections are timed on a ten-second basis. Others are timed in terms of minutes. Altogether the WRAT takes 20 to 30 minutes to complete.

Stage of Development: No attempt made to obtain a representative, national sampling for norming; seven states were used. Ethnic sampling was not discussed.

Applications: The following applications have been suggested for the WRAT: The diagnosis of reading, spelling, and arithmetic disabilities in persons of all ages, the establishment of degrees of literacy and arithmetic proficiency of mentally retarded persons, the checking of school achievement of adults referred for vocational rehabilitation and job placement, and the selection of students for specialized technical and professional schools.

Access: Jastak Associates, Inc., 1526 Gilpin Ave., Wilmington, DE 19806

56. *Title of Test: WIDE RANGE INTEREST-OPINION TEST (WRIOT)*

Description: The approach here is to attempt to develop an inventory of work interests and attitudes by portraying a variety of human activities in pictures.

Format: The *Wide Range Interest Opinion Test* was designed to cover as many areas and levels of human activity as possible. The activities portrayed in pictures are representative of those listed in the *Dictionary of Occupational Titles.* They include a wide gamut of work from unskilled labor through technical occupations to professional and managerial positions. They are not limited in scope and, therefore, do not intentionally discriminate against any occupational category or level. Specifically, the instrument consists of 450 pictures arranged in 150 combinations of three. Males and females are given the same 450 pictures, but the results are analyzed differently. The pictures are spiral bound in a re-usable booklet, or on a 35mm filmstrip. The answer sheet can be hand-scored or machine-scored.

The report form consists of a bar graph, space for raw and T-scores, and work and attitude descriptions on the front page. An explanation of the terms for the subject's use is printed on the back of the form. In addition, the remaining WRIOT components consist of a set of overlay stencils for hand scoring and a set of job title listings relating to each interest area measured. There are 24 stencils for male and 24 for females and 18 separate job title lists identical to those in the manual.

Stage of Development: The manual provides only limited data on test reliability and validity.

Application: The specific choices may be used in vocational counseling and career planning. A copy may be given to the client for independent planning, future reference, and consultation with counselors.

Access: Jastak Associates, Inc., 1526 Gilpin Ave., Wilmington, DE 19806

57. *Title of Test: WONDERLIC PERSONNEL TEST*

Description: This test is essentially a tool for examining mental ability levels and is intended to be used as a selection instrument in hiring and placing applicants and also as an indicator of future possibilities.

Format: The test requires only 12 minutes. It is practically self-administered. For this reason it is easily adaptable to business situations. All the directions are given on the first page and sample questions indicate to the applicant the type of questions he or she will find. The fifty items on each form constitute the examination and are answered by the subject without interruption. Test items include Analogies, Analysis of Geometric Figures, Arithmetic Problems,

Disarranged Sentences, Sentence Parallelism with Proverbs, Similarities, Logic, Definitions, Judgment, Direction Following using Clerical Items, Spatial Relations Items, etc. There are fourteen comparable and similar forms in current use.

Stage of Development: The test and each of the fourteen forms have been standardized in business situations on adults ranging in age from 16 to 65. A full range of work backgrounds and situations have been included in the many normative populations used. Comparative norms for large groups of adults applying for jobs are given in the test manual.

Application: The test was designed for adults in business and industrial situations.

Access: E.F. Wonderlic & Associates, Inc., P.O. Box 7, Northfield, IL 60093

SECTION D

EXPLORING THE RESOURCES IN A COMPARISON OF COMMERCIAL VOCATIONAL EVALUATION SYSTEMS

(Botterbusch)

Two excellent resources on work sample assessment exist: Backer's *Volume II* (1979b) and this study by Karl Botterbusch (1980). Anyone responsible for selecting work sample devices should be familiar with both. Botterbusch reviewed fourteen such devices; Backer reviewed thirteen. Botterbusch's analysis is referred to here since it is somewhat more comprehensive.

The numbers in the following descriptive charts refer to the numbers listed in the outline below that was used in Botterbusch's analysis. As you are reading the information on the charts, you may need to refer back to this outline.

1. Development
   a. Sponsor
   b. Target Group
   c. Basis of System

2. Organization
   a. Number of Work Samples
   b. Grouping of Work Samples
   c. Manual

3. Physical Aspects
   a. Packaging of Work Samples
   b. Durability
   c. Expendable Supplies
   d. Replacement

4. Work Evaluation Process
   a. Preliminary Screening
   b. Sequence of Administration
   c. Client Involvement
   d. Evaluation Setting
   e. Time to Complete Entire System

5. Administration
   a. Procedures
   b. Method of Instruction Giving
   c. Separation of Learning/Performance
   d. Providing Assistance to Client
   e. Repeating Work Samples

6. Scoring and Norms
   a. Timing
   b. Timing Interval
   c. Time Norms
   d. Error Scoring
   e. Scoring Aids
   f. Quality Norms
   g. Emphasis in Scoring

7. Observation of Clients
   a. Work Performance
   b. Work Behaviors
   c. Recording System
   d. Frequency of Observation

8. Reporting
   a. Forms
   b. Final Report Format

9. Utility
   a. Vocational Exploration
   b. Vocational Recommendations
   c. Counselor Utilization

10. Training in the System
    a. Training Required
    b. Training Available
    c. Duration
    d. Follow-up

11. Technical Considerations
    a. Norm Base
    b. Reliability
    c. Validity

12. Reviewer's Summary and Comments

13. Address

14. Cost (as of mid-1980)

58. *COMPREHENSIVE OCCUPATIONAL ASSESSMENT AND TRAINING SYSTEM (COATS)*

1a. Prep, Inc.
b. manpower, secondary education, and rehabilitation
c. research studies of need areas

2a. 4 components—job matching, employability attitudes, work samples, and living skills
b. 26 work samples; each is independent
c. separate manual for each component, contains all details

3a. each separately packaged in a portable container
b. durable
c. wood, sheet metal, wire, etc.
d. supplies locally

4a. not required
b. components and work samples may be given in any order
c. extensive client involvement
d. classroom atmosphere
e. 52 to 93 hours

5a. specified in detail
b. audiovisual
c. very little
d. little assistance after timing begins
e. not specified

6a. evaluator times client or client times self
b. not specified
c. computer generated scores, hand scored option for work samples
d. compared to standards
e. not used
f. skill rating
g. quality

7a. no factors recorded
b. some factors defined
c. none used; number of behaviors recorded
d. not specified

8a. standardized forms for all phases
b. computer based printout, four page optional hand scored evaluation report

9a. extensive occupational information given to client
b. specific jobs and groups of jobs
c. designed for client self-interpretation

10a. no
b. yes
c. 3-5 days
d. yes

11a. student norms on work samples
b. data in manuals
c. data in manuals

12. *Reviewer's Summary and Comments* – The COATS is the most comprehensive evaluation system presently available for use in educational and rehabilitation settings. The system is logically consistent, well designed, and based on a wide range of research studies. Two unique aspects are: (1) the emphasis upon the client using the results of the assessment to plan and, hopefully, change his own behavior and (2) the fact that each component can be used independently. This means that a facility could use, for example, the Work Samples and Job Matching Systems in an evaluation unit, the Employability Attitudes System in a work adjustment program, and the Living Skills System in a literacy training program. The COATS was designed basically for school populations and this results in several potential problems for rehabilitation facilities: (1) the client must be able to read at about the eighth grade level to use the written materials effectively, (2) the use of audiovisual format and separate answer sheets may present some problems for persons with hearing, visual and/or learning handicaps, and (3) except for the hand scored work sample option, the turnaround time of one week is a problem for facilities that typically have a two to three week period of evaluation. From a technical point of view, the weakest component is the Work Samples, which do not presently contain adequate norms.

13. *Address:* Prep, Inc., 1575 Parkway Ave., Trenton, NJ 08628

14. *Cost:* The cost of each component is as follows:
1. Job Matching System (15 cartridges, manuals, and forms for 20 persons) $2,080.00
2. Employability Attitudes (6 cartridges, manuals) 1,285.00
3. Living Skills (6 cartridges, manuals, and forms for 20 persons) 1,275.00
4. Work Samples – Price of work samples range from $435.00 to $1,450.00; the average price is $897.00. Each work sample comes with tools, cartridges, guides, and consumables for 20 persons. Average scoring cost per work sample is $5.00 per person.

59. *HESTER EVALUATION SYSTEM*

1a. Goodwill Industries of Chicago
b. all intelligence levels, physically disabled
c. DOT

2a. 28 test scores
b. grouped into 7 factors
c. contains most system details

3a. some individually packaged
b. estimate fairly durable
c. staples and paper
d. supplies locally, parts from distributor

4a. not required
b. no specified order
c. little during testing
d. formal testing setting
e. 5 hours

5a. omits many details
b. oral and demonstration
c. not applicable
d. no assistance after timing begins
e. if necessary, after two weeks

6a. evaluator times client
b. varies with type of test
c. no separate time norms given
d. no separate error scores given
e. not used
f. not used
g. time to completion of number of responses

7a, b, c, d. Because the Hester uses psychological and psychophysical tests, no behavior observations are made

8a. standardized forms for all phases
b. computer generated report lists specific jobs and other data

9a. little use to client
b. completely related to DOT
c. designed for counselor's use

10a. yes
b. yes
c. 2 days
d. not specified

11a. little information available
b. test-retest reliabilities high
c. manual contains very little data

12. *Reviewer's Summary and Comments* – The Hester uses the trait-and-factor approach that has been used as a test development model for over 40 years. This approach has proven successful for many psychological tests. The Hester attempts to present a picture of the client's abilities and to match these abilities with the structure of the DOT. The logical structure has a definite appeal to persons who stress ability testing as part of the vocational evaluation process. It must be emphasized that the lack of detailed information on the development and the validity of the system is a major source of concern. While descriptions of the development process and the scoring procedures are critical for all work sample systems, they are even more critical in a system that handles a large mass of data in ways that are not really available for the user's inspection. The lack of details on the process, coupled with the almost total

lack of technical data, force the potential user to accept the results on faith. The Hester realizes the need for occupational information, interest determination, accurate behavioral observations, and evaluator interaction with the client. The Hester could be best described as a very logical series of tests designed to relate client abilities to the Data—People—Things hierarchies of the DOT. The system is probably best used for initial screening at the beginning of the vocational evaluation process.

13. *Address*: Evaluation Systems, Inc., 640 N. LaSalle St., Suite 698, Chicago, IL 60610

14. *Cost*: The total cost per installed system is $7200.00. This includes all testing equipment, paper-and-pencil tests, data sheets and forms for 100 clients, and training.

60. *JEWISH EMPLOYMENT AND VOCATIONAL SERVICE (JEVS) WORK SAMPLE SYSTEM*

1a. U.S. Department of Labor
b. initially for disadvantaged
c. DOT

2a. 28
b. 10 Worker Trait Groups
c. contains all system details

3a. each work sample packaged separately
b. very durable
c. paper, fabric, string
d. most purchased locally

4a. nonrequired
b. progressive from easiest to hardest
c. some
d. realistic work setting stressed
e. 6-7 days

5a. specified in detail
b. oral and demonstration
c. minimal
d. assistance lowers score
e. not recommended

6a. client uses time clock
b. from end of instructions to completion of task
c. rated on 3 point scale
d. random check, compared to standards
e. minimal use
f. most rated on a 3 point scale
g. time and quality given equal weight

7a. 16 specific; 4 general factors specified
b. clearly defined
c. 3 point rating scale
d. extensive observation

8a. standardized forms for all phases
b. standardized format recommends Worker Trait Groups

9a. limited use
b. highly related to the DOT
c. orientated toward counselor

10a. yes
b. yes
c. 1 week
d. yes

11a. 1100 clients
b. no data available
c. no recent data are available

12. *Reviewer's Summary and Comments* – The JEVS System is a highly standardized and well integrated procedure for client evaluation based on ten of the DOT Worker Trait Groups. The strongest points of the system are its stress upon careful observation and accurate recording of work behaviors and performance factors. The use of a trait-and-factor approach ties in well with the assessment of specific abilities. The major problems with the system appear to be the abstract nature of many of the work samples, which hinders vocational exploration, limited evaluation feedback to the client, and the lack of job information presented to the client. The system is best used when a thorough evaluation of the client's potential is desired.

13. *Address:* Vocational Research Institute, Jewish Employment and Vocational Service, 1700 Sansom Street, 9th Floor, Philadelphia, PA 19103

14. *Cost:* $7,975.00 includes all work samples and forms, shipping, tuition for training one person in Philadelphia and one on-site visit by JEVS staff. The cost of transportation and living expenses for the person to be trained and for the JEVS staff for the one on-site visit are not included in the price.

61. *McCARRON DIAL – WORK EVALUATION SYSTEM (MDWES)*

1a. McCarron & Dial
b. mentally retarded, mentally ill, learning disabled
c. 5 neuropsychological factors

2a. 17
b. grouped into 5 factors
c. 4 manuals; very detailed

3a. 5 separate briefcase-like kits
b. not applicable
c. no consumable materials used
d. must be ordered from manufacturer

4a. client interview
b. in order by factors
c. encouraged
d. formal testing and workshop
e. 2 weeks recommended

5a. specified in detail
b. oral and demonstration
c. not applicable
d. little assistance provided
e. if necessary

6a. evaluator times client
b. specified time limits
c. some separate time norms
d. compared to standards
e. not used
f. combined with time norms for overall score
g. quality

7a. factors identified
b. clearly defined
c. 2 separate instruments used
d. 2 hours for 5 days

8a. standardized forms for all areas
b. profile of results and recommendations

9a. little use to client
b. 1 of 5 program areas is recommended
c. disability determination

10a. yes
b. yes
c. 3 days
d. not required

11a. several groups of disabled clients
b. high .80's; low .90's
c. considerable data in manuals; separate studies in literature

12. *Reviewer's Summary and Comments* — The McCarron-Dial was designed for the purpose of assessing the mentally disabled person's ability to function. It uses a combination of widely accepted individually administered psychological tests, assessments of fine and gross motor ability, and an extended period of observation. Rather than discard those tests which have proven useful, or to rely solely on performance and behavior observation, the McCarron-Dial attempts to combine them into a single prediction tool. It is encouraging to note that some detailed, well-designed studies have been conducted with the MDWES. In a vocational evaluation setting, the system may achieve its best use as a preliminary assessment device for assessing general levels of functioning prior to a systematic exploration of interests and specific skills.

13. *Address:* McCarron-Dial Systems, P.O. Box 45628, Dallas, TX 75245

14. *Cost:* The five separate kits are priced as follows:

Auxiliary Component	– $168.00	SSSQ	– $125.00
HVDT	– 296.00	HMMT	– 490.00
MAND	– 336.00		

Manuals are included in the kits; however, manuals may also be purchased separately.

62. *MICRO-TOWER*

1a. ICD Rehabilitation & Research Center
b. general rehabilitation population
c. DOT

2a. 13
b. 5 groups of general aptitudes
c. general manual, separate manual for each work sample contains all system details

3a. each work sample packaged separately
b. durable
c. wire only
d. all forms locally if desired

4a. not required
b. discretion of evaluator
c. extensive client involvement
d. combination of formal testing and counseling
e. 15-20 hours

5a. specified in detail
b. audio cassette, evaluator demonstrations
c. stressed, almost total
d. no assistance after timing begins
e. not specified

6a. cassette tape
b. specified time for each work sample
c. no time norms used
d. number completed; pieces correct
e. some use
f. rated on 5 point scale
g. emphasis on quality

7a. no specific factors defined
b. 5 work behaviors listed
c. none
d. frequent observations expected

8a. standardized forms for all phases
b. 3 separate forms used to report different results

9a. some direct client use
b. related to DOT
c. designed for counselor use

10a. no
b. yes
c. 2 or 3 days
d. not specified

11a. 19 different norm groups
b. adequate data in manuals; high reliabilities
c. construct concurrent validity reported

12. *Reviewer's Summary and Comments – Micro-TOWER* may best be described as a group aptitude battery that uses work sampling techniques as the assessment method. The system claims to measure seven of the nine aptitudes that are used in the Worker Trait Groups arrangements of the DOT/GATB. The system has the advantage of being group administered in a fairly short period of time, thus making maximum use of evaluator time. The system attempts to go beyond the mere assessment of aptitudes by providing occupational information and group discussion. Adequate norms are available, except for employed workers. The system generally takes a standardized, psychological test approach with emphasis on carefully controlled administration conditions, the separation of learning from performance, and the reporting of results in terms of percentiles. One of the most encouraging aspects of the *Micro-TOWER* is the apparent concern with continued development and refinement, as evidenced by the numerous technical articles. One major problem with the system is the lack of thorough behavioral observational materials. Another possible problem is the converse of the advantages of a group administered test –the evaluator may not be able to provide the client with the one-to-one relationship that is needed for some severely disabled persons.

13. *Address:* Micro-TOWER, ICD Rehabilitation and Research Center, 340 East 24th St., New York, NY 10010

14. *Cost:* The cost of the Micro-TOWER depends primarily upon the number of clients being tested in the group. Each client requires a complete set of equipment. An additional set of equipment is needed for the evaluator.

Prices are available for group sizes from 4 to 30, for example:

Number of Persons Tested Per Group	*Price*
4	$ 7,943.00
7	9,023.00
10	10,103.00
20	13,703.00
30	17,303.00

The above prices include all equipment, forms to test 100 clients per work sample, one set of evaluator's equipment for each work sample, a cassette playback and a cue-stop system, table easels, and photo books.

63. *PRE-VOCATIONAL READINESS BATTERY (VALPAR NO. 17)*

1a. Valpar Corporation
b. mentally retarded
c. not specified

2a. 11 assessment techniques using different formats
b. 5 areas
c. general manual; separate manual for each area detailed

3a. each of the 5 areas packaged separately
b. very durable
c. no consumable materials
d. forms ordered from developer or locally reproduced

4a. not specified
b. any order
c. considerable
d. not specified
e. 5½ hours

5a. specified in detail
b. oral, oral and demonstration, or oral and demonstration with a sample audiovisual
c. minimal
d. not specified
e. strongly recommended

6a. only one time score used on entire system
b. preset for the one task
c. used only for one task
d. except for one area, number of correct responses
e. not used
f. based on total points
g. number of correct responses

7a. no factors listed
b. some specific areas defined
c. 3 point rating scale
d. not specified

8a. standardized forms for recording and scoring
b. not used; depends upon facility

9a. some direct client use
b. largely dependent upon user
c. results of each specific task designed for counselor usage

10a. no
b. yes
c. 1 day or more
d. as requested by user

11a. "research norms"
b. no data available
c. no data available

12. *Reviewer's Summary and Comments* – Valpar No. 17 is apparently intended to be an assessment of the variables that must be considered when assessing a mentally retarded person's interests, vocational skills, and social maturity. The system is designed to be used by a person who is not trained in psychology, medicine, or occupational therapy. The system is well designed, attractive, and novel in many ways. The use of audiovisual and gaming materials will make it attractive to clients as well as evaluators. Data collection forms are unusually well designed. The major problems are in the technical areas. The manuals contain no background as to why certain components were selected, no relationship to previous work done in this field. No data are given on reliability and validity; there is not even a statement on these two factors. The norms data are impossible to interpret without additional information. In summary, this is a very attractive assessment device, but much more needs to be known about it.

13. *Address:* Valpar Corporation, 3801 E. 34th St., Suite 105, Tucson, AZ 85713

14. *Cost:* $3,200

64. *SINGER VOCATIONAL EVALUATION SYSTEM (SVES)*

1a. Singer Educational Division
b. special needs population
c. groups of related jobs

2a. 25
b. each is independent
c. single evaluators manual; very detailed

3a. each self-contained in a carrel
b. expect some problems
c. wood, wire, chemicals
d. supplies locally or through Singer

4a. not required
b. discretion of evaluator
c. extensive client involvement
d. classroom atmosphere
e. 2½ hours per work sample

5a. specified in detail
b. audiovisual
c. little
d. checkpoints built in
e. at request of client

6a. evaluator times client
b. varies with each work sample
c. based on number of minutes to completion
d. compared to criteria
e. some use
f. 5 point scale or subtracted from time score
g. time and errors given equal weight

7a. 20 factors defined
b. none listed
c. none used for behaviors – records actual observations
d. not specified

8a. standardized forms for all phases
b. no format given; includes description of contents

9a. extensive information given to client
b. dependent upon user
c. dependent upon user

10a. no
b. yes
c. 2 day, 1 or 2 week

11a. clients, employed workers, MTM
b. test-retest .61 and .71
c. mostly content

12. *Reviewer's Summary and Comments* – In a review of the Singer system published in an earlier version of this publication, the system was criticized for its inadequate manual. The most recent Singer manual corrects for the earlier lack of thoroughness and goes on to provide almost all the data that the evaluator would need. The process of developing MTM and employed worker norms is one of the strong points of the VES. Also encouraging is the publication of some basic studies on the system. Presently, the system provides a measure of interest measurement and skill assessment for jobs mostly in the skilled trades and technical areas. The occupational information remains the strong point of the system. The major problems are the lack of work atmosphere, the use of expendable supplies, and the possible need for a superstructure to integrate the units into a functional whole.

13. *Address:* Singer Educational Division, Career Systems, 80 Commerce Drive, Rochester, NY 14623

14. *Cost:* As of January 1980, cost per work station ranges from $1,150.00 to $1,290.00 with the average cost being $1,544.00. The price includes shipping and enough supplies to evaluate approximately 30 people. Singer usually will not sell less than ten work stations initially.

65. *TALENT ASSESSMENT PROGRAM (TAP)*

1a. Talent Assessment Programs
b. age 14 up; mental levels above trainable mentally retarded
c. occupational clusters

2a. 10
b. each is independent
c. some details not provided

3a. all individually packaged
b. extremely durable
c. no consumable materials
d. locally or from distributor

4a. not specified
b. 8 of the work samples can be given in any order
c. not specified
d. not specified
e. 2½ hours

5a. not specified in detail
b. oral and demonstration
c. some
d. none
e. encouraged for upgrading

6a. evaluator times client
b. from end of instructions to completion of task
c. actual time recorded
d. client corrects mistakes on some tests
e. not used
f. combined with time norms for overall score
g. time

7a. no factors defined
b. no factors defined
c. no rating method used
d. not specified

8a. two standardized forms
b. profile of results and narrative report

9a. very limited use
b. related to specific jobs
c. orientated toward counselor

10a. yes
b. yes
c. 1½ days
d. as needed

11a. 7 different norm groups
b. .85 coefficient of stability
c. no data available

12. *Reviewer's Summary and Comments* — As opposed to other work evaluation systems which attempt to present a complete picture of the client, the TAP can be characterized as a battery of perceptual and dexterity tests designed to measure gross and fine finger and manual dexterity; visual and tactile discrimination; and retention of details. Thus, it is limited to the assessment of these fairly specific factors. The developer does not claim that this system will assess all vocationally significant capacities and behaviors; in fact, the manual states that other assessment devices should be used in addition to the TAP to obtain a complete evaluation of the client.

13. *Address:* Talent Assessment, Inc., P.O. Box 5087, Jacksonville, FL 32207

14. *Cost:* The $3,100 (and up) price includes delivery and on-site staff training.

66. *TESTING ORIENTATION AND WORK EVALUATION IN REHABILITATION (TOWER)*

1a. Vocational Rehabilitation Administration
b. physically and emotionally disabled
c. job analysis

2a. 93
b. 14 training areas
c. single manual; some details not provided

3a–d. Because ICD does not sell hardware, each facility must construct its own. This section is not relevant for TOWER.

4a. emphasized for planning
b. progressive within areas
c. not specified
d. realistic work setting stressed
e. 3 weeks

5a. some specified in detail, except layout
b. written and demonstration
c. not specified
d. not specified
e. encouraged for upgrading

6a. evaluator times client
b. from end of instructions to completion of task
c. rated on 5 point scale
d. compared to standards
e. extensive use
f. rated on 5 point scale
g. time and quality given equal weight

7a. only one factor defined
b. a few listed in final report
c. 5 point rating scale
d. not specified; frequent observations assumed

8a. standardized form for all phases
b. narrative report using standardized outline and ratings

9a. exposure to a variety of work areas
b. limited to jobs related to work areas
c. orientated toward counselor

10a. yes
b. yes
c. 3 weeks
d. no

11a. clients
b. no data available
c. equivocal results

12. *Reviewer's Summary and Comments* – The TOWER System is the oldest complete work evaluation system and over the years has served as a model for the development of many work samples. The TOWER uses a realistic job setting to thoroughly evaluate clients for a rather narrow group of jobs. The facts that the TOWER was based on job analysis and that the system has been used for many years to place and train handicapped people are indications that the system is very useful in evaluating clients for a small group of jobs. The lack of precise definitions for work performance factors and client behaviors and the lack of adequate norms are the major weaknesses of the system. The high use of written instructions and the high level of the areas evaluated restricts its use with low literate and mentally retarded clients.

13. *Address:* ICD Rehabilitation and Research Center, 340 East 24th St., New York NY 10010

14. *Cost:* $300.00 for three copies of all work samples and forms; training tuition is $150.00, which includes manual. Note: No hardware is sold by ICE; each facility constructs the work samples. ICD estimates cost to set up unit at about $5,000.00.

67. *VALPAR COMPONENT WORK SAMPLE SYSTEM*

1a. Valpar Corporation
b. general population, industrially injured worker
c. trait and factor

2a. 16
b. each is independent
c. separate manual for each work sample; most material detailed

3a. all individually packaged
b. very durable
c. few consumable supplies used
d. order from developer

4a. not required
b. discretion of evaluator
c. minimal
d. not specified
e. estimate about 1 hour per work sample

5a. specified in detail
b. oral and demonstration: some reading
c. none
d. not specified
e. encouraged

6a. evaluator times client
b. from end of instruction to completion of task
c. actual time recorded
d. some scored separately; others combined with time scores
e. some use
f. separate norms
g. weighed combination of time and errors

7a. no factors defined
b. 17 factors defined
c. 5 point rating scale
d. not specified

8a. separate form for each work sample
b. none used; independent work samples

9a. limited use
b. depends upon use in facility
c. cannot be specified

10a. no
b. yes
c. as needed
d. as needed

11a. 6 different norm groups: MTM norms
b. data available; cannot be assessed
c. no data available

12. *Reviewer's Summary and Comments — The Valpar Component Work Sample System* currently consists of sixteen individual work samples which are physically well designed and constructed. They are appealing to clients and lend themselves to easy administration and scoring. Individual work samples can be easily incorporated into an existing evaluation program. Because these individual work samples can be purchased as needed by facilities, there are no unified final report forms, and other aspects of an integrated system are lacking. The major problem with the Valpar is in the area of relationship to jobs. According to the manuals, each component is keyed to a number of specific occupations as well as worker trait groups. However, the manuals offer no convincing evidence that, for example, one work sample could be related to ten Worker Trait Groups.

13. *Address:* Valpar Corporation, 3801 East 34th St., Tucson, AZ 85713

14. *Cost:* Individual work samples range from $495.00 to $990.00. Any number of work samples can be purchased.

68. *VOCATIONAL INFORMATION AND EVALUATION WORK SAMPLES (VIEWS)*

1a. Philadelphia JEVS
b. mentally retarded
c. DOT

2a. 16
b. 4 areas of work
c. very detailed

3a. most individually in portable plastic cabinets
b. very durable
c. paper, string, fiberboard
d. supplies locally; parts from developer

4a. not required
b. progressive from least to most complex
c. extensive client involvement
d. realistic work setting stressed
e. .20 to 35 hours

5a. specified in detail
b. oral & modeling, flexibility to use a variety of techniques stressed
c. almost total; well established criteria
d. little assistance after timing begins
e. repeated if considered necessary

6a. evaluator times client
b. after task is learned to completion
c. rated on 3 point scale; also MODAPTS
d. compared to standards
e. some use
f. rated on 3 point scale
g. time and errors given equal weight

7a. 10 factors defined
b. clearly defined
c. specific behaviors reported
d. extensive

8a. standardized forms for all phases
b. standard format containing behavior data and recommended Worker Trait Groups

9a. little use to client
b. related to DOT
c. oriented toward counselor

10a. yes
b. yes
c. 1 week
d. yes

11a. 452 mentally retarded MODAPTS
b. no data available
c. no data available

12. *Reviewer's Summary and Comments* – The VIEWS attempts to evaluate the vocational potential of mentally retarded adults for jobs in six Worker Trait Groups. The system relates to job areas that are very common in the national economy and more important to job areas where many retarded persons have found successful employment. The most unique feature of the system is the attempt to separate learning from performance. The developers believe that the client should be thoroughly taught the task prior to performing it under timed conditions. The VIEWS also uses standardized behavior observations which are combined with time and quality scores to produce a well organized final report. The major problem with using the VIEWS by itself is the lack of occupational information.

13. *Address:* Vocational Research Institute, Jewish Employment and Vocational Service, 1700 Sansom St., 9th Floor, Philadelphia, PA 19103

14. *Cost:* $7,675.00 includes: work samples, manuals, forms, shipping, tuition for training one person in Philadelphia and one on-site visit by JEVS staff. Living expenses and transportation are not included in the price.

69. *VOCATIONAL INTEREST TEMPERAMENT AND APTITUDE SYSTEM (VITAS)*

1a. Manpower Administration
b. employment service applicants
c. DOT

2a. 21
b. 15 Worker Trait Groups
c. detailed

3a. each packaged separately
b. very durable
c. paper, string, sheet metal
d. supplies locally; parts from developer

4a. not specified
b. progressive from easiest to most difficult
c. considerable client involvement
d. realistic work setting stressed
e. 15 hours

5a. specified in detail
b. oral & demonstration
c. no separation
d. minimum assistance
e. not recommended

6a. evaluator times client
b. after instructions until task completed
c. rated on 3 point scale
d. compared to standards
e. no use
f. rated on 3 point scale
g. time and errors given equal weight

7a. 9 factors defined
b. several general factors defined
c. specific behaviors reported
d. almost constant observation stressed

8a. standardized forms used for all phases
b. standardized format; stresses Worker Trait Groups

9a. little use to client
b. related to DOT & supportive services
c. aimed at counselor

10a. yes
b. yes
c. 1 week
d. yes

11a. 600 CETA clients
b. no data available
c. no data available

12. *Reviewer's Summary and Comments* – The VITAS System is the third work sample system developed by Philadelphia JEVS. Like the JEVS and VIEWS systems, it stresses the importance of careful and accurate behavior observations. The system also uses the work sample to WTG approach that has served JEVS and VIEWS so well in the past. It must also be pointed out that many of the VITAS work samples are refinements and modifications of the original JEVS system. While the system could provide accurate assessment of CETA populations in a relatively short period of time, it has two problems: (1) a lack of client occupational information, and (2) the failure to make any real distinction between learning and performance. The emphasis upon close client contact, careful observations, and the practical reporting format are the three major advantages of the system.

13. *Address:* Vocational Research Institute, Jewish Employment and Vocational Service, 1700 Sansom St., 9th Floor, Philadelphia, PA 19103

14. *Cost:* $8,190.00 includes work samples, manuals, forms, shipping, and tuition for training one person in Philadelphia and one on-site visit. Living expenses and transportation are not included in the price.

70. *VOCATIONAL SKILLS ASSESSMENT AND DEVELOPMENT PROGRAM (BRODHEAD-GARRETT)*

1a. Brodhead-Garrett
b. handicapped and disadvantaged
c. not specified

2a. 18 work samples – Phase 1
b. Phase I – sorting, assembly, and salvage; by 3 phases
c. separate manual for each phase. Phase 1 lacks many details

3a. Phase I – packaged in large wooden cabinet
b. very durable
c. Phase I – minimal amount
d. assumed to be from local sources

4a. not required
b. discretion of user
c. assume fairly high degree of involvement
d. mostly classroom
e. reviewer estimates Phase I in 1 week

5a. not specified
b. oral & demonstration
c. some
d. not specified
e. permitted to correct excessive errors

6a. evaluator times client
b. from end of practice to completion of task
c. reported on 3 point scale
d. not specified
e. not used
f. no separate quality norms
g. time and quality given equal weight

7a. no factors defined
b. 36 defined
c. 5 point scale
d. not specified

8a. standardized forms for recording scores and work behaviors
b. 4 page final report, topic headings

9a. extensive, especially with Phase II
b. by job area
c. not specified

10a. none
b. yes
c. 2 days to 1 week
d. as needed

11a. no data available
b. no data available
c. no data available

12. *Reviewer's Summary and Comments* – The Brodhead-Garrett is a system that is intended to provide continuous service from initial assessment through training and eventually job placement. In this aspect it is unique. Phase I is the only part of the system that can be considered as a work evaluation system as this term is usually used in vocational evaluation. Phase I lacks detailed evaluation and client instructions, norms, proper setup procedures, and scoring methods. In short, the manual for Phase I does not give the evaluator enough information to accurately use the system. In using Phase I, the evaluator must also ask how the content of assessment tasks is related to the specific training given in the other two phases. The success of Phases II and III depends on a large part upon the quality of instruction and the physical facilities. These two phases have the potential for being very useful for training clients in both basic skills and for some entry level positions.

13. *Address:* Brodhead-Garrett Company, 4560 East 71st St., Cleveland, OH 44105

14. *Cost:* Phase I manual and equipment are approximately $5,950.00. Phase II and Phase III costs depend upon how many tools, equipment, and materials are presently available with the facility or school. If all Phase II and Phase III hardware and software were to be purchased, the cost would be about $48,000. Software costs for each Phase II and Phase III component is $375.00 per manual.

71. *WIDE RANGE EMPLOYMENT SAMPLE TEST (WREST)*

1a. Jastak Associates
b. severely disabled – mentally and physically
c. not specified

2a. 10
b. each work sample is independent
c. well organized manual; contains all details

3a. system packaged in wood cabinet
b. durable
c. mostly paper products
d. from developer

4a. not required
b. discretion of evaluator
c. clients told purpose and use of results
d. not specified
e. 1½ hours

5a. specified in detail; can be group administered
b. oral & demonstration
c. considerable
d. none given after timing starts
e. encouraged for upgrading

6a. evaluator times client
b. from end of instructions for a specified period of time
c. time to completion; compared to scaled scores
d. compared to standards
e. not used
f. all errors totaled for a single quality score
g. time

7a. no factors defined
b. 10 defined in general terms
c. scale from 1 to 18
d. not specified

8a. standardized form for recording performance
b. numerous examples given in manual

9a. limited use
b. not specified
c. not specified

10a. none
b. none
c. not applicable
d. not applicable

11a. 3 major groups; characteristics well defined
b. test-retest coefficients in .80's and .90's
c. correlations between scores and supervisor's ratings .86 and .92

12. *Reviewer's Summary and Comments* – The WREST consists of ten short, low-level tasks apparently designed to assess mainly the manipulation and dexterity abilities of the client. Although it is not stated in the manual, the WREST seems most useful in assessing new clients for assignment to suitable work projects within a sheltered workshop. The emphasis upon repeating the work samples many times should provide an evaluation of the client's ability to improve his performance under repeated practice conditions. The major problems of the system center around the lack of systematic behavior observations, failure to relate results to the competitive job market, and the apparent lack of a useable final report for the referring counselor or agency. Finally, the WREST has an adequate norm base, good estimates of test-retest validity, and attempts to establish concurrent validity. In a field that is all too often characterized by poor technical development, the WREST can serve as a good example.

13. *Address:* Jastak Associates, Inc., 1526 Gilpin Ave., Wilmington, DE 19806

14. *Cost:*

Work Sample Set	$1,698.00
Manual	22.00
Resupply Kit	99.00
Record Forms (50)	6.90

SECTION E
EXPLORING THE RESOURCES OF THE UNITED STATES EMPLOYMENT SERVICE

The following tests and techniques have been developed by the U.S. Employment Service for measurement of occupational aptitudes and interests and clerical and literacy skills.

- *General Aptitude Test Battery (GATB)* consists of 12 tests measuring 9 vocational aptitudes. It measures the vocational aptitudes of individuals who have basic literacy skills but who need help in choosing an occupation. A Spanish version (BEAG) is available.

- *Specific Aptitude Test Batteries (SATB)* consist of combinations of two, three, or four GATB aptitudes with associated cutting scores. More than 450 of these have been developed for use in selecting untrained or inexperienced applicants for referral to specific jobs or occupational training.

- *Nonreading Aptitude Test Battery (NATB)* consists of 14 tests measuring the same 9 aptitudes measured by the GATB. It was developed for use with individuals who do not have sufficient literacy skills to take the GATB.

- *Clerical Skills Tests* measure proficiency in typing, dictation, and spelling to determine the level of skills required in clerical jobs.

- *Basic Occupational Literacy Test (BOLT)* consists of four parts: arithmetic computation, arithmetic reasoning, reading vocabulary, and reading comprehension. It measures the literacy skills of educationally deficient applicants and can be related to the literacy requirements of occupations.

- *BOLT Wide Range Scale* (see GATB-NATB Screening Device) is used as an indicator of appropriate levels of BOLT subtests to administer and as a device to determine whether the GATB or NATB would be more appropriate for a given individual. The Wide Range Scale may be administered individually by the counselor or group administered in the testing unit. The Scale takes about fifteen minutes to administer and is scored separately for vocabulary and arithmetic.

- *Pretesting Orientation Techniques* are used in orienting the applicant to the testing situation. The techniques include a booklet "Doing Your Best on Aptitude Tests," available in English and Spanish; a booklet "Doing Your Best on Reading and Arithmetic Tests;" a miniature aptitude test battery "Pretesting Orientation Exercises;" and an illustrated lecture-discussion technique "Pretesting Orientation on the Purpose of Testing," available in English and Spanish.

- *JEVS Work Sample Assessment* consists of a series of work tasks, a structure environment in which they are performed, and an evaluation of the client's behavior based on observations. This technique, developed through contract with the Jewish Employment and Vocational Service of Philadelphia, is designed for use in developing the employability of disadvantaged individuals.

- *Interest Check List (ICL)* consists of 173 sample tasks representing a broad range of occupational activities. It is used as an interviewing aid to obtain information on the range of an applicant's occupational interests.

Several of these tests and assessment techniques have been described elsewhere in the guidebook. Items on the subsequent pages include the tests not noted previously.

72. *GENERAL APTITUDE TEST BATTERY (GATB) AND SPECIFIC APTITUDE TEST BATTERIES (SATB)*

The GATB consists of twelve tests measuring nine occupational aptitudes, as follows:

1. *General Learning Ability (G)* – The ability to "catch on" or understand instructions and underlying principles; the ability to reason and make judgments (measured by Part 3–Three Dimensional Space; Part 4–Vocabulary, Part 6–Arithmetic Reason).

2. *Verbal Aptitude (V)* – The ability to understand meaning of words and ideas associated with them and the ability to use them effectively. The ability to comprehend language, to understand relationships between words, and to understand meanings of whole sentences and paragraphs. The ability to present information or ideas clearly (measured by Part 4–Vocabulary).

3. *Numerical Aptitude (N)* – Ability to perform arithmetic operations quickly and accurately. (measured by Part 2–Computation; Pary 6–Arithmetic Reason)

4. *Spatial Aptitude (S)* – Ability to comprehend forms in space and understand relationships of plane and solid objects. Frequently described as the ability to "visualize" objects of two or three dimensions, or to think visually of geometric forms (measured by Part 3–Three Dimensional Space).

5. *Form Perception (P)* – Ability to perceive pertinent details in objects or in pictorial or graphic material. Ability to make visual comparisons and discriminations and see slight differences in shapes and shadings of figures and widths and lengths of lines (measured by Part 5–Tool Matching; Part 7–Form Matching).

6. *Clerical Perception (Q)* – Ability to perceive pertinent detail in verbal or tabular material. Ability to observe differences in copy, to proofread words and numbers, and to avoid perceptual errors in arithmetic computation (measured by Part 1–Name Comparison).

7. *Motor Coordination (K)* – Ability to coordinate eyes and hands or fingers rapidly and accurately in making precise movements with speed. Ability to make a movement response accurately and swiftly (measured by Part 8–Mark Making).

8. *Finger Dexterity (F)* – Ability to move the fingers and manipulate small objects with the fingers rapidly and accurately (measured by Part 11–Assemble; Part 12–Disassemble).

9. *Manual Dexterity (M)* – Ability to move the hands easily and skillfully. Ability to work with the hands in placing and turning motions (measured by Part 9–Place; Part 10–Turn).

Finger dexterity and manual dexterity are measured with the use of apparatus tests, while the other aptitudes are measured by paper-and-pencil tests.

The *Manual for the USES General Aptitude Test Battery* (U.S. Department of Labor, 1970) consists of separately bound sections; they are as follows: Section I – Administration and Scoring; Section II – Occupational Aptitude Pattern Structure; Section III – Development; and Section IV – Norms: Specific Occupations.

Since its publication in 1947, the GATB has been researched in a continuing program of development and occupational validation. This research has produced over 450 Specific Aptitude Test Batteries (SATBs), consisting of combinations of two, three, or four aptitudes with associated cutting scores for specific occupations and a system of Occupational Aptitude Patterns (OAPs) consisting of combinations of three aptitudes with associated cutting scores for groups of occupations. A description of this research is contained in the *Manual for the USES General Aptitude Test Battery,* Section III: Development.

Because of the possibility that SATBs might be invalid and/or unfair for minority groups, current emphasis is being placed on revalidating existing SATBs using samples that include subgroups of minorities large enough to permit separate statistical analysis. SATBs revalidated with such samples (some two dozen by mid-1976) have demonstrable fairness and validity for minority groups.

Research is being completed to develop a new Spanish edition of the GATB. This new edition, the Bateria de Examenes de Aptitud General (BEAG), is designed to have general applicability for use with Spanish-speaking ES applicants, including those in Puerto Rico.

Administration of the entire GATB requires about two and one-quarter hours. All the paper-and-pencil tests, except Part 8, are arranged in two booklets for which answer sheets are provided. Part 8 is on a separate sheet and no answer sheet is required. Scoring stencils are used for hand scoring. Raw scores are converted to aptitude scores by use of conversion tables. When more than one test is used to provide a measure of a given aptitude, the converted scores for each test are summed to obtain the aptitude score.

Occupational Aptitude Patterns (OAPs) are combinations of three GATB aptitudes with associated cutting scores. They indicate the aptitude requirements for groups of occupations. There are sixty-two OAPs and they cover more than 1,200 occupations. The OAP-aptitude score matching process is described in detail in the *Manual for the USES General Aptitude Test Battery,* Section I: Administration and Scoring. Specific Aptitude Test Batteries (SATBs) are combinations of two, three, or four aptitudes with associated cutting scores. SATBs reflect aptitude requirements for specific occupations against which an individual's aptitude scores can be matched. There are more than 450 SATBs, and the SATB-aptitude score-matching process is the same as that for OAPs.

73. *USES CLERICAL SKILLS TESTS*

The six clerical skills tests measure skills important in a variety of clerical occupations. The skills measured are: typing from plain copy, ability to take dictation, general spelling, statistical typing, medical spelling, and legal spelling.

1. The plain copy typing test consists of typing from a typed page containing two letters for five minutes. Either a manual or electric typewriter may be used, as the examiner prefers. The test content is typical of correspondence of a variety of types of employers. Six forms of the typing

test are available. The test yields separate measures of typing speed (words per minute and decile scores) and typing accuracy expressed as a decile score, which compares the examinee to experienced typists.

2. The dictation test consists of two 200 word letters that are dictated at 60, 80, and 100 words per minute. Content of the letters is typical of correspondence of a variety of employers. Examinees take dictation on stenographic notebooks in the usual manner, but transcription is accomplished by marking a true-false answer sheet to indicate whether certain words were or were not dictated. Twenty-five minutes are allowed to complete the true-false test. The test may be administered "live" or by standardized recordings. Six forms of the dictation test are available. The test yields an accuracy score expressed as a decile score to indicate how well the examinee was able to correctly identify selected words in the two passages as compared to secretaries and stenographers generally. The number of dictated words per minute, at which the examinee took dictation, is also reported, although this is not, strictly speaking, a score.

3. The spelling test consists of 90 words, some correctly spelled and some incorrectly spelled. The content is typical of words used in correspondence in a variety of employment situations. There are two forms of the general spelling test. The test yields an accuracy score expressed as a decile score which expresses the examinee's standing relative to a sample of experienced secretaries and stenographers.

4. The statistical typing test consists of typing from numerical material in a columnar form for 10 minutes on either a manual or an electric typewriter, as the examinee prefers. There is only one form of this test. The test yields speed and accuracy scores expressed as a decile score, which allows comparison of the examinee to experienced typists who spend at least 10 percent of their time typing tabular material.

5. The medical spelling test consists of 40 medical terms that are read aloud by the examiner, using a pronunciation guide, and spelled out by examinees on an answer form. The test yields an accuracy score expressed as a decile, which allows comparison of the examinee to employed workers in the medical/clerical field.

6. The legal spelling test consists of 40 legal terms that are read aloud by the examiner using a pronunciation guide and spelled out by examinees on an answer form. The test yields an accuracy score, expressed as a decile, which allows comparison of examinee's performance with performance of employed workers in the legal/clerical field.

The *Manual for USES Clerical Skills Tests* (U.S. Department of Labor, 1976) consists of two separately bound sections, as follows:

- *Section 1: Administration, Scoring and Interpretation:* Contains procedures for administration and scoring of the six clerical skills tests and guidelines for interpreting and using the test results.
- *Section 2: Development:* Contains detailed technical information on the development of each of the clerical skills tests.

Instructions for administering and scoring each of the clerical skills tests are found in Section 1 of the *Manual for USES Clerical Skills Tests.* The norm tables for each test are used to correct raw scores to deciles based on representative samples of experienced workers.

Section 1 of the *Manual for the USES Clerical Skills Tests* provides information on use and interpretation. Much of the use for clerical skills tests is self evident; if a clerical job includes the task measured to "a significant extent," the test will be useful in placement in the job. However, judgment enters into use in determining what "a significant extent" really means.

The norms are based on test performance of experienced workers and a lower grade score is expected for new and inexperienced workers. It may require some persuasive ability to convince an employer that clerical skills develop over time and that an entry clerical worker, on the average, will score lower than an experienced worker.

74. *USES INTEREST CHECKLIST*

The checklist is an interviewing aid used to obtain information on the range of vocational interests of a counselee. It is particularly useful with persons who have no definite work interests or who have limited knowledge of the variety of jobs and occupational fields. The checklist enumerates 173 items that have been taken without alteration in wording or sequence and keyed to the Worker Trait Agreement (WTA) and Occupational Group Arrangement (OGA) of the third edition of the *Dictionary of Occupational Titles.* The numbers in parentheses underneath each group of items in the checklist refer to WTA and OGA classifications which should be explored with the counselee when responses indicate an interest in the activities described. The checklist should be administered in accordance with the separately published *Instructions for Administering and Using the Interest Checklist.*

No score is obtained from the checklist. It is not a test, but rather an interviewing aid. It is an exploratory device through which the counselor and counselee can investigate together the range of vocational interests of the counselee. Details of interpretation are contained in the *Instructions for Administering and Using the Interest Checklist.*

In addition, an occupational interest inventory oriented to the 4th edition of the *Dictionary of Occupational Titles* has been developed. The objective is to make available to vocational counselors an interest inventory with scales for measuring an applicant's occupational interests that will relate directly to DOT areas of work.

APPENDIXES

APPENDIX A
LEARNING FROM THE EXPERIENCES OF OTHERS

In order to learn from the experiences of others, a number of telephone interviews were conducted with twenty practitioners throughout the country. Since the sample was small, broad generalizations cannot be made. Nevertheless, these opinions provide some interesting insights and are therefore included (although not everyone might agree with them). We strongly urge testing coordinators to conduct similar surveys and to contact users of specific tests that are being considered for selection or in the case of work samples, possible adaptation. The sample comments listed below have been reconstructed from the notes of the telephone conversations.

Staff Training

Professional people must be involved in the assessment process. They really have to know what they are doing, and therefore, they should be trained at the master's level. Special expertise is needed.

One cannot be ignorant of the assessment tools, so inservice training is needed. We need to learn the basic principles of assessment, e.g., objectivity and reliability. But we also need to be familiar with the assessment process and not just psychometry.

Grade Scores

It is important to focus on the actual competencies of the participants. But often this is masked by grade equivalent scores that lead to negative self-esteem. The concept of grade equivalencies is inappropriate, especially for disadvantaged populations. It is unfortunate that some tests put out results in grade equivalents.

Using Tests

We try to work closely with counselors who should use the test results as only one factor in assessing participants. The counselors should be professionals who understand how to interpret results. In our case, they are called base counselors; that is, persons who work with the participants throughout the entire process. They must keep in mind that some people simply don't test well. In addition, those who give the tests should know how to look for clues. For example, if they test older people, they should be aware of possible vision problems.

Obviously, when dealing with a machine—in using a work sample approach, for example—it is easy to forget the human element, the people who bring problems in with them. You have to make sure the individual is counseled and trained well, especially those with drug, alcohol, or psychological problems. You should not use assessment in isolation; that is, you need to have a program to go along with the testing, e.g., a syllabus on getting and keeping a job.

No test, no matter which, is a panacea. The value of a test depends on the level of the persons tested, especially disadvantaged persons. Even the appearance and length of a test is important; if it looks too complicated, be careful. Look at the results with common sense and remember that a test should not "make or break" a person. Counselors should remember that it is not a life or death matter. Remember, too, that some people are test takers and some are not; some very smart people freeze in a test situation.

Select your counselors carefully—and counsel carefully. Since different participants respond better to different tests, you need an arsenal of tests and people to determine which to use. You should have a file cabinet of tests and try them out. Make certain the tests are culture-free and make certain you stay in compliance with the Equal Employment Office (EEO) requirements.

Counselors should have a background in education or rehabilitation and must enjoy working with people. We need to be concerned with an individual's performance more than anything else; that is, we should consider the flexible use of time in an open-entry, open-exit, fashion. Training should be based on performance.

You need interchange with the participants. Talk to them about what they thought of the test. Also, and this is most important, whatever time the participants spend in the program should be a paid activity. It should be extended as long as is necessary for participants to finish the training needed. Time flexibility is essential.

Do not place evaluation in concrete. Look at areas other than testing. Do not stand just on an evaluation. Place the emphasis on client characteristics as related to worker characteristics; that is, by using DOT traits. For example, how well does he or she work with others? What are his or her interpersonal relations? Also, follow up after placement to see how they are doing. Set it up so that the participants make the decisions on what areas are to be evaluated.

Tests won't tell you that many specifics, but they will give you some good general directions.

The major point to understand is that tests provide actual performance data on any certain date. The tester's job is merely to offer an opinion. Do not be god-like. One must temper one's opinions. Tests are just one tool in counseling. The results are not to be taken as gospel.

APPENDIX B
STUDYING THE RELATED STANDARDS OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

Standards for Educational and Psychological Tests. Washington, DC: American Psychological Association, Inc., 1974.

The standards were developed jointly by the American Psychological Association, the American Educational Research Association, and the National Council on Measurement in Education. They include a number of useful guidelines for test users. The standards include items grouped into the following areas:

1) standards for tests, manuals, and reports – dissemination of information regarding tests; aids to interpretation; directions for administration and scoring; norms and scales;
2) standards for reports on research on reliability and validity – validity; reliability and measurement error;
3) standards for the use of tests – qualifications and concerns of users; choice or development of test or method; administration and scoring; and interpretation of scores.

The explanation in the parentheses after the standards are the levels suggested by the APA.

Qualifications and Concerns of Users

- G1. A test user should have a general knowledge of measurement principles and of the limitations of test interpretations. (essential)

- G2. A test user should know and understand the literature relevant to the tests he/she uses and the testing problems with which he/she deals. (very desirable)

- G3. One who has the responsibility for decisions about individuals or policies that are based on test results should have an understanding of psychological or educational measurement and of validation and other test research. (essential)

- G4. Test users should seek to avoid bias in test selection, administration, and interpretation; they should try to avoid even the appearance of discriminatory practice. (essential)

- G5. Institutional test users should establish procedures for periodic internal review of test use. (essential)

Choice of Development of Test or Method

- H1. The choice or development of tests, test batteries, or other assessment procedures should be based on clearly formulated goals and hypotheses. (essential)

- H2. A test user should consider more than one variable for assessment and the assessment of any given variable by more than one method. (essential)

- H3. In choosing an existing test, a user should relate its history of research and development to his intended use of the instrument. (essential)

- H4. In general a test user should try to choose or to develop an assessment technique in which "tester-effect" is minimized, or in which reliability of assessment across testers can be assured. (essential)

Administration and Scoring

- I1. A test user is expected to follow carefully the standardized procedures described in the manual for administering a test. (essential)

- I2. The test administrator is responsible for establishing conditions consistent with the principle of standardization, that enables each examinee to do his/her best. (essential)

- I3. A test user is responsible for accuracy in scoring, checking, coding, or recording test results. (essential)

- I4. If specific cutting scores are to be used as a basis for decisions, a test user should have a rationale, justification, or explanation of the cutting scores adopted. (essential)

- I5. The test user shares with the test developer or distributor a responsibility for maintaining test security. (essential)

Interpretation of Scores

- J1. A test score should be interpreted as an estimate of performance under a given set of circumstances. It should not be interpreted as some absolute characteristic of the examinee or as something permanent and generalizable to all other circumstances. (essential)

- J2. Test scores should ordinarily be reported only to people who are qualified to interpret them. If scores are reported, they should be accompanied by explanations sufficient for the recipient to interpret them correctly. (essential)

- J3. The test user should recognize that estimates of reliability do not indicate criterion-related validity. (essential)

- J4. A test user should examine carefully the rationale and validity of computer-based interpretations of test scores. (essential)

- J5. In norm-referenced interpretations, a test user should interpret an obtained score with reference to sets of norms appropriate for the individual tested and for the intended use. (essential)

- J6. Any content-referenced interpretation should clearly indicate the domain to which one can generalize. (essential)

- J7. The test user should consider alternative interpretations of a given score. (essential)

- J8. The test user should be able to interpret test performance relative to other measures. (very desirable)

• J9. A test user should develop procedures for systematically eliminating from data files, test-score information that has, because of the lapse of time, become obsolete. (essential)

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